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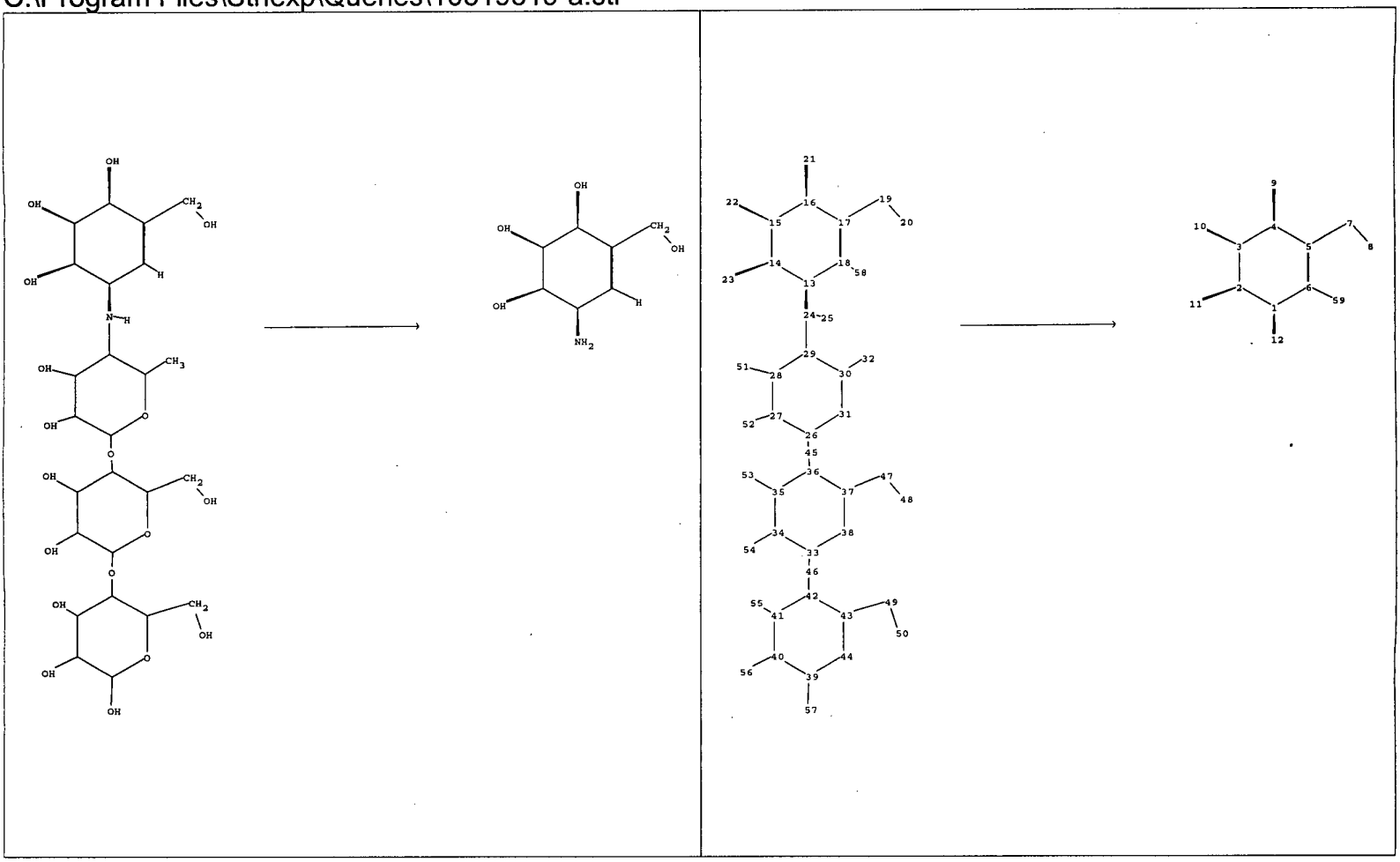
=> d his

     (FILE 'HOME' ENTERED AT 11:23:24 ON 07 AUG 2007)

     FILE 'CAPLUS, MEDLINE' ENTERED AT 11:24:27 ON 07 AUG 2007
L1            17 S VALIENAMINE (P) VALIDAMYCIN (P) VALIDOXYLAMINE
L2             1 S L1 AND ACID?
L3            16 S L1 NOT L2
L4             0 S L3 AND TFA
L5             0 S L3 AND TRIFLUOROACETIC ACID?
L6             2 S L3 AND HYDROLYS?
L7             2 S L3 AND HYDROLY?
L8             0 S L8 NOT L6
L9            14 S L3 NOT L6
L10            1 S VALIENAMINE (P) TFA
L11            2 S VALIENAMINE (P) TRIFLUOROACET?
```

C:\Program Files\Stnexp\Queries\10519519-a.str



chain nodes :
7 8 9 10 11 12 19 20 21 22 23 24 25 32 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59
ring nodes :
1 2 3 4 5 6 13 14 15 16 17 18 26 27 28 29 30 31 33 34 35 36 37 38 39 40 41 42 43 44
chain bonds :
1-12 2-11 3-10 4-9 5-7 6-59 7-8 13-24 14-23 15-22 16-21 17-19 18-58 19-20 24-25 24-29 26-45 27-52 28-51 30-32 33-46 34-54 35-53 36-45 37-47 39-57 40-56 41-55 42-46 43-49 47-48 49-50
ring bonds :
1-2 1-6 2-3 3-4 4-5 5-6 13-14 13-18 14-15 15-16 16-17 17-18 26-27 26-31 27-28 28-29 29-30 30-31 33-34 33-38 34-35 35-36 36-37 37-38 39-40 39-44 40-41 41-42 42-43 43-44
exact/norm bonds :
1-2 1-6 1-12 2-3 2-11 3-4 3-10 4-5 4-9 5-6 13-14 13-18 13-24 14-15 14-23 15-16 15-22 16-17 16-21 17-18 24-29 26-27 26-31 26-45 27-28 27-52 28-29 28-51 29-30 30-31 33-34 33-38 33-46 34-35 34-54 35-36 35-53 36-37 36-45 37-38 39-40 39-44 39-57 40-41 40-56 41-42 41-55 42-43 42-46 43-44
exact bonds :
5-7 6-59 7-8 17-19 18-58 19-20 24-25 30-32 37-47 43-49 47-48 49-50

Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:CLASS 8:CLASS 9:CLASS 10:CLASS 11:CLASS 12:CLASS 13:Atom

14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:CLASS 20:CLASS 21:CLASS 22:CLASS 23:CLASS
24:CLASS 25:CLASS 26:Atom 27:Atom 28:Atom 29:Atom 30:Atom 31:Atom 32:CLASS 33:Atom 34:Atom
35:Atom 36:Atom 37:Atom 38:Atom 39:Atom 40:Atom 41:Atom 42:Atom 43:Atom 44:Atom 45:CLASS
46:CLASS 47:CLASS 48:CLASS 49:CLASS 50:CLASS 51:CLASS 52:CLASS 53:CLASS 54:CLASS 55:CLASS
56:CLASS 57:CLASS 58:CLASS 59:CLASS
fragments assigned product role:
containing 1
fragments assigned reactant/reagent role:
containing 13

Stereo Bonds:

9-4 (Single Hash).
10-3 (Single Wedge).
11-2 (Single Hash).
12-1 (Single Hash).
21-16 (Single Hash).
22-15 (Single Wedge).
23-14 (Single Hash).
24-13 (Single Hash).

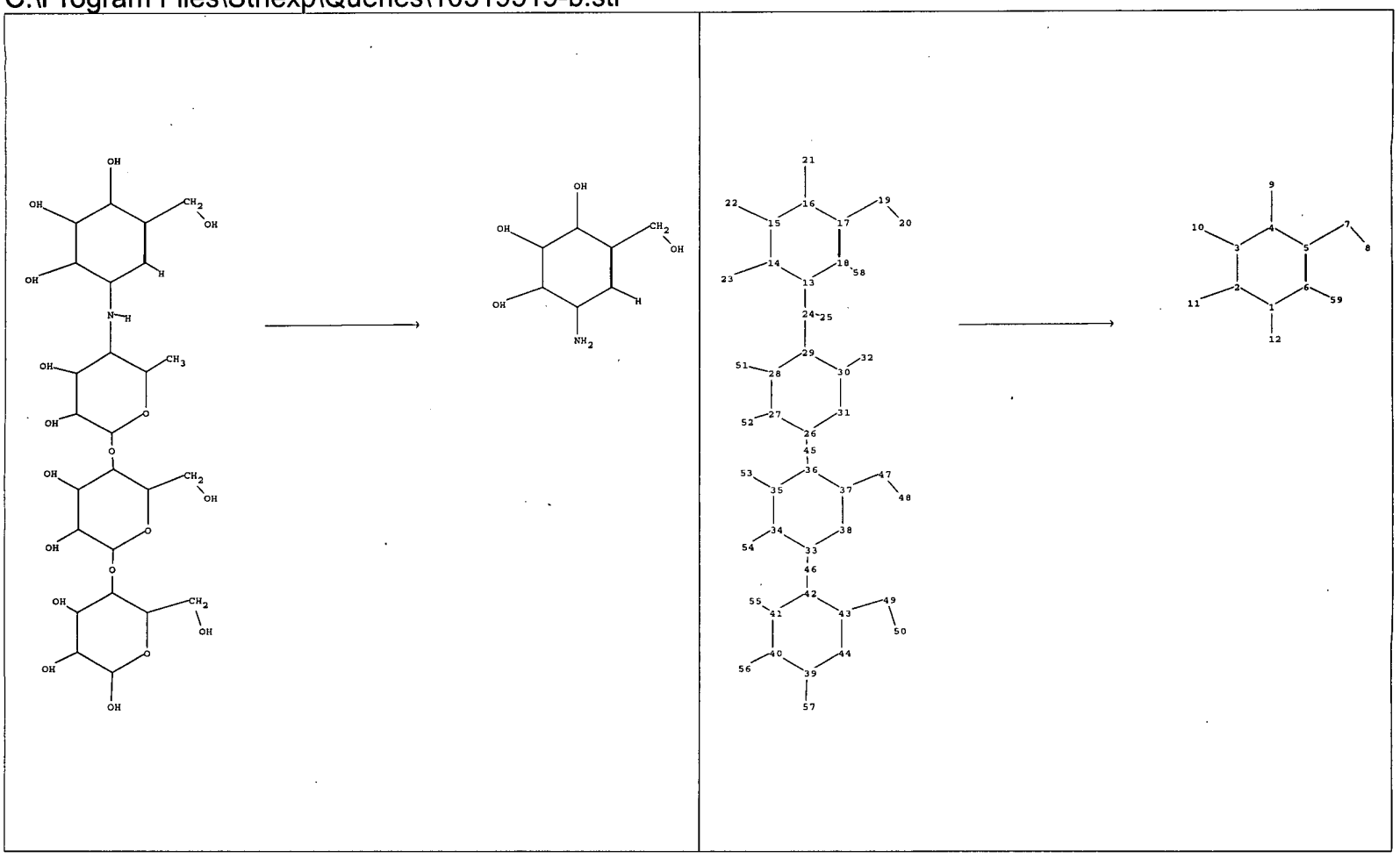
Stereo Chiral Centers:

1 (Parity=Odd)
2 (Parity=Even)
3 (Parity=Odd)
4 (Parity=Even)
13 (Parity=Odd)
14 (Parity=Even)
15 (Parity=Odd)
16 (Parity=Even)

Stereo RSS Sets:

Type=Relative (Default). 4 Nodes= 1 2 3 4
Type=Relative (Default). 4 Nodes= 13 14 15 16

C:\Program Files\Stnexp\Queries\10519519-b.str



chain nodes :
7 8 9 10 11 12 19 20 21 22 23 24 25 32 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59
ring nodes :
1 2 3 4 5 6 13 14 15 16 17 18 26 27 28 29 30 31 33 34 35 36 37 38 39 40 41 42 43 44
chain bonds :
1-12 2-11 3-10 4-9 5-7 6-59 7-8 13-24 14-23 15-22 16-21 17-19 18-58 19-20 24-25 24-29 26-45 27-52 28-51 30-32 33-46 34-54 35-53 36-45 37-47 39-57 40-56 41-55 42-46 43-49 47-48 49-50
ring bonds :
1-2 1-6 2-3 3-4 4-5 5-6 13-14 13-18 14-15 15-16 16-17 17-18 26-27 26-31 27-28 28-29 29-30 30-31 33-34 33-38 34-35 35-36 36-37 37-38 39-40 39-44 40-41 41-42 42-43 43-44
exact/norm bonds :
1-2 1-6 1-12 2-3 2-11 3-4 3-10 4-5 4-9 5-6 13-14 13-18 13-24 14-15 14-23 15-16 15-22 16-17 16-21 17-18 24-29 26-27 26-31 26-45 27-28 27-52 28-29 28-51 29-30 30-31 33-34 33-38 33-46 34-35 34-54 35-36 35-53 36-37 36-45 37-38 39-40 39-44 39-57 40-41 40-56 41-42 41-55 42-43 42-46 43-44
exact bonds :
5-7 6-59 7-8 17-19 18-58 19-20 24-25 30-32 37-47 43-49 47-48 49-50

Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:CLASS 8:CLASS 9:CLASS 10:CLASS 11:CLASS 12:CLASS 13:Atom

14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:CLASS 20:CLASS 21:CLASS 22:CLASS 23:CLASS 24:CLASS 25:CLASS 26:Atom 27:Atom 28:Atom 29:Atom 30:Atom 31:Atom 32:CLASS 33:Atom 34:Atom 35:Atom 36:Atom 37:Atom 38:Atom 39:Atom 40:Atom 41:Atom 42:Atom 43:Atom 44:Atom 45:CLASS 46:CLASS 47:CLASS 48:CLASS 49:CLASS 50:CLASS 51:CLASS 52:CLASS 53:CLASS 54:CLASS 55:CLASS 56:CLASS 57:CLASS 58:CLASS 59:CLASS

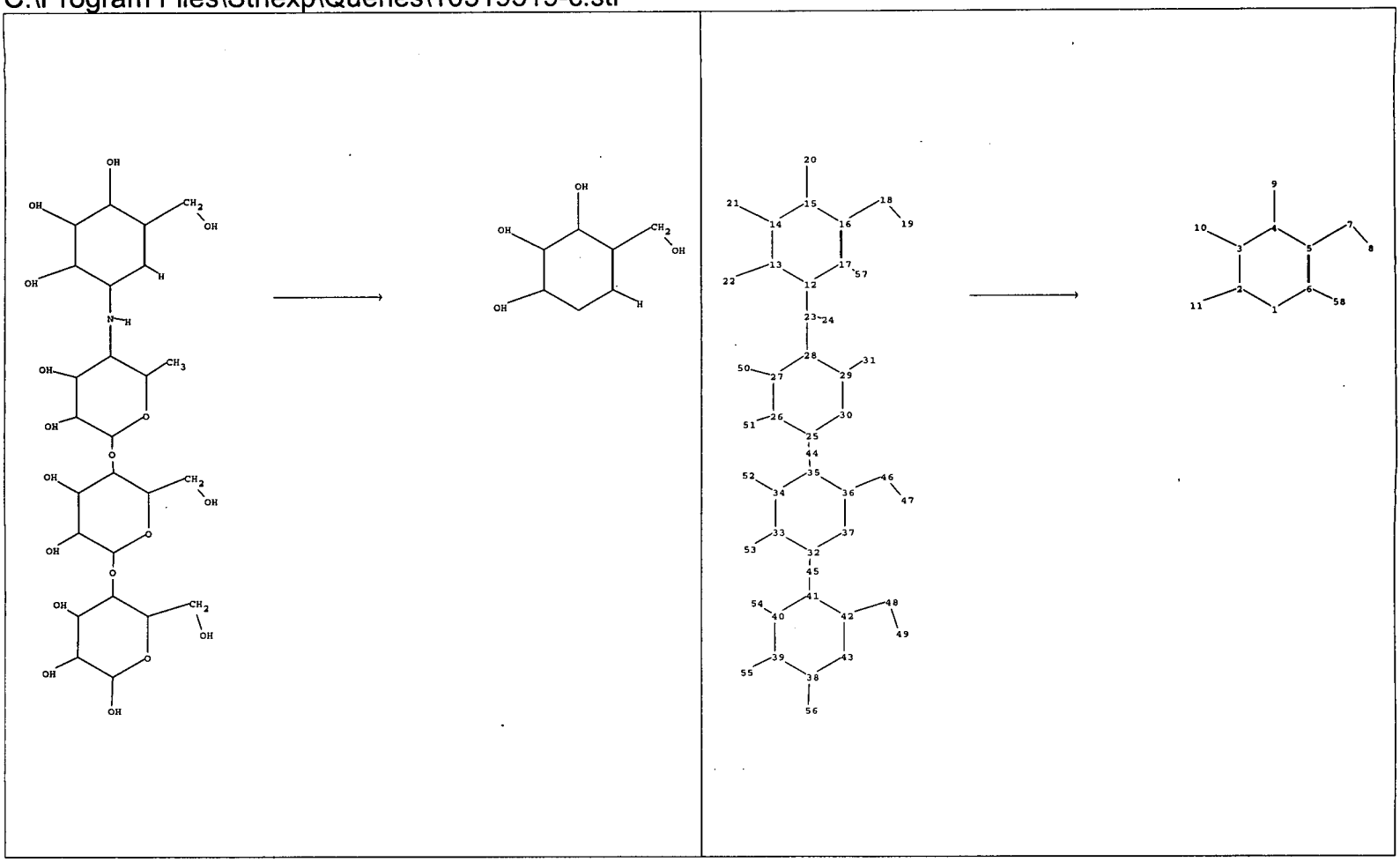
fragments assigned product role:

containing 1

fragments assigned reactant/reagent role:

containing 13

C:\Program Files\Stnexp\Queries\10519519-c.str



chain nodes :
7 8 9 10 11 18 19 20 21 22 23 24 31 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58
ring nodes :
1 2 3 4 5 6 12 13 14 15 16 17 25 26 27 28 29 30 32 33 34 35 36 37 38 39 40 41 42 43
chain bonds :
2-11 3-10 4-9 5-7 6-58 7-8 12-23 13-22 14-21 15-20 16-18 17-57 18-19 23-24 23-28 25-44 26-51 27-50 29-31 32-45 33-53 34-52 35-44 36-46 38-56 39-55 40-54 41-45 42-48 46-47 48-49
ring bonds :
1-2 1-6 2-3 3-4 4-5 5-6 12-13 12-17 13-14 14-15 15-16 16-17 25-26 25-30 26-27 27-28 28-29 29-30 32-33 32-37 33-34 34-35 35-36 36-37 38-39 38-43 39-40 40-41 41-42 42-43
exact/norm bonds :
1-2 1-6 2-3 2-11 3-4 3-10 4-5 4-9 5-6 12-13 12-17 12-23 13-14 13-22 14-15 14-21 15-16 15-20 16-17 23-28 25-26 25-30 25-44 26-27 26-51 27-28 27-50 28-29 29-30 32-33 32-37 32-45 33-34 33-53 34-35 34-52 35-36 35-44 36-37 38-39 38-43 38-56 39-40 39-55 40-41 40-54 41-42 41-45 42-43
exact bonds :
5-7 6-58 7-8 16-18 17-57 18-19 23-24 29-31 36-46 42-48 46-47 48-49

Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:CLASS 8:CLASS 9:CLASS 10:CLASS 11:CLASS 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:CLASS 19:CLASS 20:CLASS 21:CLASS 22:CLASS 23:CLASS 24:CLASS

25:Atom 26:Atom 27:Atom 28:Atom 29:Atom 30:Atom 31:CLASS 32:Atom 33:Atom 34:Atom 35:Atom 36:Atom 37:Atom 38:Atom 39:Atom 40:Atom 41:Atom 42:Atom 43:Atom 44:CLASS 45:CLASS 46:CLASS 47:CLASS 48:CLASS 49:CLASS 50:CLASS 51:CLASS 52:CLASS 53:CLASS 54:CLASS 55:CLASS 56:CLASS 57:CLASS 58:CLASS

fragments assigned product role:

containing 1

fragments assigned reactant/reagent role:

containing 12

L3 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2006:652542 CAPLUS
DOCUMENT NUMBER: 145:103375
TITLE: Preparation method of valienamine from validamycin using trifluoroacetic acid
INVENTOR(S): Huh, Yul; Oh, Jin Hwan
PATENT ASSIGNEE(S): Bt Gin, Inc., S. Korea
SOURCE: Repub. Korean Kongkae Taeho Kongbo, No pp. given
CODEN: KRXXA7
DOCUMENT TYPE: Patent
LANGUAGE: Korean
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
KR 2004000751	A	20040107	KR 2002-35682	20020625
PRIORITY APPLN. INFO.:			KR 2002-35682	20020625

AB A method for preparing valienamine from validamycin using trifluoroacetic acid (TFA) is provided to improve the production yield of valienamine by allowing only pseudodisaccharide to be produced as a byproduct and by enhancing the purifying efficiency. The valienamine is prepared from validamycin as a reaction substrate by using trifluoroacetic acid by selective hydrolysis. Preferably the validamycin is at least one selected from the group consisting of validamycin A, B, C, D, E, F and G. The final concentration of validamycin is 0.2-10%, and the concentration of trifluoroacetic acid is 10-60%. Preferably the reaction is performed at a temperature of 80-120°C for 1-24 h in an autoclave.

L7 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:2831 CAPLUS
DOCUMENT NUMBER: 140:59898
TITLE: Hydrolytic preparation of valienamine from acarbose and/or acarbose derivatives using aqueous trifluoroacetic acid
INVENTOR(S): Her, Youl; Oh, Jin-Hwan
PATENT ASSIGNEE(S): B T Gin., Inc., S. Korea
SOURCE: PCT Int. Appl., 14 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004000782	A1	20031231	WO 2002-KR2198	20021123
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
KR 2004002339	A	20040107	KR 2002-51511	20020829
AU 2002368036	A1	20040106	AU 2002-368036	20021123
EP 1539672	A1	20050615	EP 2002-790977	20021123
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
CN 1630630	A	20050622	CN 2002-829209	20021123
JP 2005530839	T	20051013	JP 2004-515194	20021123
IN 2004KN01947	A	20051230	IN 2004-KN1947	20041217
US 2005272674	A1	20051208	US 2005-519519	20050801

PRIORITY APPLN. INFO.:		
KR 2002-35683	A	20020625
KR 2002-51511	A	20020829
WO 2002-KR21983	W	20020101
WO 2002-KR2198	W	20021123

AB A method for the preparation of valienamine from acarbose and/or acarbose derivs. (e.g., disaccharide or trisaccharide) is described using aqueous trifluoroacetic acid to effect an acidic hydrolysis of the acarbose or its derivative so as to give valienamine in high yield and selectivity.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2006:926700 CAPLUS
DOCUMENT NUMBER: 145:489500
TITLE: Preparation method of valienamine from acarbose and/or acarbose derivatives using trichloroacetic acid or tribromoacetic acid
INVENTOR(S): Her, Youl; Oh, Jin Hwan
PATENT ASSIGNEE(S): Btgin Co., Ltd., S. Korea
SOURCE: Repub. Korean Kongkae Taeho Kongbo, No pp. given
CODEN: KRXXA7
DOCUMENT TYPE: Patent
LANGUAGE: Korean
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
KR 2005061790	A	20050623	KR 2003-93227	20031218
PRIORITY APPLN. INFO.:			KR 2003-93227	20031218

AB A method for preparing high-purity valienamine [i.e., (1S,2S,3R,6S)-6-amino-4-(hydroxymethyl)-4-cyclohexene-1,2,3-triol] is claimed. The starting material for this process is acarbose [i.e., O-4,6-dideoxy-4-[[(1S,4R,5S,6S)-4,5,6-trihydroxy-3-(hydroxymethyl)-2-cyclohexen-1-yl]amino]-α-D-glucopyranosyl-(1→4)-O-α-D-glucopyranosyl-(1→4)-D-glucose, BAY-g 5421, Prandase, Glucobay, etc.]. This compound is a strong α-glucosidase inhibitor and a central precursor for the preparation of voglibose. The method involves the use of acarbose and/or acarbose derivs. as starting materials and has a yield of 70-95%, thereby also reducing the amount of pigments formed. The valienamine is prepared from acarbose and/or acarbose derivs. by using trichloroacetic acid or tribromoacetic acid. Preferably the final concentration of acarbose and/or acarbose derivs. used as a reactant substrate is 0.2-10 %. The amount of trichloroacetic acid or tribromoacetic acid is 10-60 % and the reaction is carried out at a temperature of 80-120°C for 1-24 h. Preferably the reaction is carried out in an autoclave at a high temperature and a high pressure to reduce the reaction time and to improve yield.

L10 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:2831 CAPLUS
DOCUMENT NUMBER: 140:59898
TITLE: Hydrolytic preparation of valienamine from acarbose and/or acarbose derivatives using aqueous trifluoroacetic acid
INVENTOR(S): Her, Youl; Oh, Jin-Hwan
PATENT ASSIGNEE(S): B T Gin., Inc., S. Korea
SOURCE: PCT Int. Appl., 14 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004000782	A1	20031231	WO 2002-KR2198	20021123

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

KR 2004002339	A	20040107	KR 2002-51511		20020829
AU 2002368036	A1	20040106	AU 2002-368036		20021123
EP 1539672	A1	20050615	EP 2002-790977		20021123
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK					
CN 1630630	A	20050622	CN 2002-829209		20021123
JP 2005530839	T	20051013	JP 2004-515194		20021123
IN 2004KN01947	A	20051230	IN 2004-KN1947		20041217
US 2005272674	A1	20051208	US 2005-519519		20050801
PRIORITY APPLN. INFO.:			KR 2002-35683	A	20020625
			KR 2002-51511	A	20020829
			WO 2002-KR21983	W	20020101
			WO 2002-KR2198	W	20021123

AB A method for the preparation of valienamine from acarbose and/or acarbose derivs. (e.g., disaccharide or trisaccharide) is described using aqueous trifluoroacetic acid to effect an acidic hydrolysis of the acarbose or its derivative so as to give valienamine in high yield and selectivity.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L10 ANSWER 3 OF 3 MEDLINE on STN

ACCESSION NUMBER: 2007113769 MEDLINE

DOCUMENT NUMBER: PubMed ID: 17058074

TITLE: Preparation of 3-ketovalidoxylamine A C-N lyase substrate: N-p-nitrophenyl-3-ketovalidamine by Stenotrophomonas maltrophilia CCTCC M 204024.

AUTHOR: Zhang Jian-Fen; Zheng Yu-Guo; Liu Zhi-Qiang; Shen Yin-Chu

CORPORATE SOURCE: Institute of Bioengineering, Zhejiang University of Technology, Hangzhou, 310032, People's Republic of China.

SOURCE: Applied microbiology and biotechnology, (2007 Jan) Vol. 73, No. 6, pp. 1275-81. Electronic Publication: 2006-10-21. Journal code: 8406612. ISSN: 0175-7598.

PUB. COUNTRY: Germany: Germany, Federal Republic of

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE) (RESEARCH SUPPORT, NON-U.S. GOV'T)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 200705

ENTRY DATE: Entered STN: 27 Feb 2007
Last Updated on STN: 30 May 2007
Entered Medline: 29 May 2007

AB 3-Ketovalidoxylamine A C-N lyase is one of three key enzymes in the production of valienamine, which is a potent glucosidase inhibitor from validamycin A. N-p-Nitrophenyl-3-ketovalidamine, used as the substrate of 3-ketovalidoxylamine A C-N lyase, was prepared from N-p-nitrophenylvalidamine with free cells of Stenotrophomonas maltrophilia CCTCC M 204024. The yield and selectivity of N-p-nitrophenyl-3-ketovalidamine from cells were improved by treatment with 10 mM ethylenediaminetetraacetic acid. The optimal pH and temperature for N-p-nitrophenyl-3-ketovalidamine formation was pH 6.0 and 30 degrees C, respectively. N-p-Nitrophenyl-3-ketovalidamine was formed with a yield of 0.68 in the first batch.

L13 ANSWER 1 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2007:157729 CAPLUS
DOCUMENT NUMBER: 147:85664
TITLE: High performance liquid chromatographic method for the determination of Valienamine
AUTHOR(S): Yang, Lei; Gao, Min; Zu, Yuangang
CORPORATE SOURCE: Key Laboratory of Forest Plant Ecology of the Ministry of Education, Northeast Forest University, Harbin, 150040, Peop. Rep. China
SOURCE: Fenxi Huaxue (2006), 34(9), 1357
CODEN: FHHHDT; ISSN: 0253-3820
PUBLISHER: Kexue Chubanshe
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
AB Valienamine formed by hydrolysis of acarbose. Valienamine was determined by HPLC on Hypersil NH2 column using diode array detection. The mobile phase is acetonitrile solution containing phosphate buffer solution at pH 6.8.

L13 ANSWER 2 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2006:1066194 CAPLUS
DOCUMENT NUMBER: 145:397114
TITLE: Hydrolytic method for preparing valienamine from acarbose or acarbose derivatives in the presence of a base
INVENTOR(S): Byun, Il Suk; Kim, Joo Sung; Shin, Sung Hye; Kim, Wan Joo
PATENT ASSIGNEE(S): Chemtech Research Incorporation, S. Korea
SOURCE: PCT Int. Appl., 12pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006107134	A1	20061012	WO 2005-KR4093	20051202

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

PRIORITY APPLN. INFO.: KR 2005-21852 A 20050316
KR 2005-36755 A 20050502
OTHER SOURCE(S): CASREACT 145:397114; MARPAT 145:397114
AB The present invention provides a method for preparing valienamine from acarbose or acarbose derivs. by using a base (e.g., sodium hydroxide). The present invention provides an improved method for preparing valienamine compared to conventional preparation methods of valienamine by simplifying the reaction steps and diminishing byproducts.
REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 3 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:241641 CAPLUS
DOCUMENT NUMBER: 142:446071
TITLE: A New Method for Production of Valienamine with Microbial Degradation of Acarbose
AUTHOR(S): Chen, Xiaolong; Zheng, Yuguo; Shen, Yinchu
CORPORATE SOURCE: Institute of Bioengineering, Zhejiang University of Technology, Hangzhou, 310032, Peop. Rep. China
SOURCE: Biotechnology Progress (2005), 21(3), 1002-1003
CODEN: BIPRET; ISSN: 8756-7938
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 142:446071
AB A new method for the production of valienamine with the microbial degradation of acarbose is described. The microorganism was screened by our laboratory and identified as Stenotrophomonas maltophilia. After separation, valienamine was analyzed with UV, IR, and 1H and 13C NMR. The yield was more than 60%.
REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 4 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:1074181 CAPLUS
DOCUMENT NUMBER: 142:23470
TITLE: Preparation method of valienamine via selective hydrolysis of acarbose, validamycin, and validoxylamine derivatives using exchange resins or zeolite as catalysts
INVENTOR(S): Hur, Yul; Oh, Jin-Hwan; Park, Young-Il
PATENT ASSIGNEE(S): B T Gin., Inc., S. Korea
SOURCE: PCT Int. Appl., 16 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

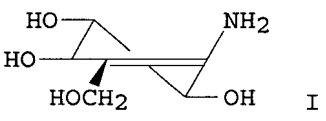
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004108657	A1	20041216	WO 2003-KR2657	20031205
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
KR 2004106192	A	20041217	KR 2003-38671	20030616
AU 2003304178	A1	20050104	AU 2003-304178	20031205
CN 1849297	A	20061018	CN 2003-80110343	20031205
JP 2006527165	T	20061130	JP 2005-500590	20031205

PRIORITY APPLN. INFO.: KR 2003-37561 A 20030611
KR 2003-38671 A 20030616
WO 2003-KR2657 W 20031205
OTHER SOURCE(S): CASREACT 142:23470
AB Disclosed is a preparation method of valienamine using solid catalysts. The valienamine, which has strong inhibiting activity, is prepared by selective hydrolysis of acarbose and acarbose derivs., validamycin and validamycin derivs., validamycin and validamycin derivs.,

or validoxylamine and validoxylamine derivs. In the present invention, a solid catalyst such as a strong acidic cation exchange resin, a strong basic anion exchange resin or zeolite is used.
REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 5 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1999:251450 CAPLUS
DOCUMENT NUMBER: 130:312000
TITLE: Synthesis of [7-3H]valienamine, [7-3H]valienone, [7-3H]valiolamine and [7-3H]valiolone from validamycin A
AUTHOR(S): Lee, Sungsook; Tornus, Ingo; Dong, Haijun; Groger, Stefan
CORPORATE SOURCE: Department of Chemistry, University of Washington, Seattle, WA, 98195-1700, USA
SOURCE: Journal of Labelled Compounds & Radiopharmaceuticals (1999), 42(4), 361-372
CODEN: JLCRD4; ISSN: 0362-4803
PUBLISHER: John Wiley & Sons Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB To investigate the biosynthetic pathway to the cyclitol moieties of acarbose and validamycin A, [7-3H]valienamine, [7-3H]valienone, [7-3H]valiolamine and [7-3H]valiolone were synthesized as plausible precursors. Valienamine together with validamine was isolated from the degradation of validamycin A by Flavobacterium saccharophilum and served as starting material for the synthesis. Validamine was removed partially at the stage of tritylation and completely after the oxidation of the primary hydroxy group at C-7 to the aldehyde. The resulting valienamine aldehyde was reduced with tritiated sodium borohydride to produce [7-3H]valienamine. The latter was converted to [7-3H]valiolamine by a synthetic route described in the literature. The 3H-labeled amines were oxidized to [7-3H]valienone and [7-3H]valiolone, resp., using 3,5-di-tert-butyl-1,2-benzoquinone (DBQ) followed by hydrolysis with oxalic acid.
REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 6 OF 6 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1982:163077 CAPLUS
DOCUMENT NUMBER: 96:163077
TITLE: Cyclitol reactions. V. Synthesis of enantiomerically pure valienamine from quebrachitol
AUTHOR(S): Paulsen, Hans; Heiker, Fred R.
CORPORATE SOURCE: Inst. Org. Chem. Biochem., Univ. Hamburg, Hamburg, D-2000/13, Fed. Rep. Ger.
SOURCE: Liebigs Annalen der Chemie (1981), (12), 2180-203
CODEN: LACHDL; ISSN: 0170-2041
DOCUMENT TYPE: Journal
LANGUAGE: German
GI

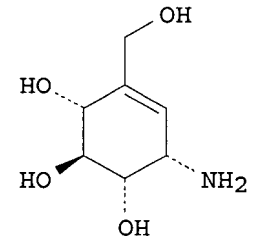


I

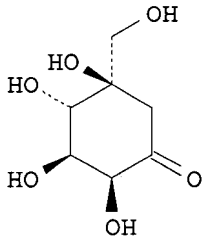
AB Valienamine (I), as a central structural unit of the antidiabetic acarbose, was prepared enantioselectively from quebrachitol. Techniques for introducing sidechains, azido groups, and double bonds into

the inositol ring system were investigated.

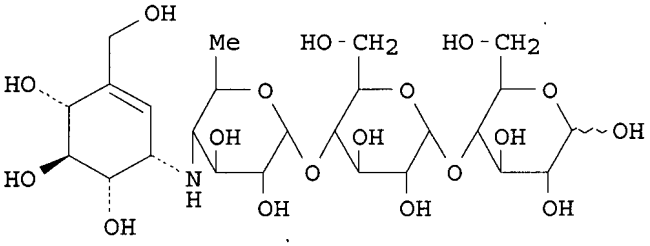
L14 ANSWER 8 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1999:436779 CAPLUS
DOCUMENT NUMBER: 131:240167
TITLE: Biosynthetic studies on the α-glucosidase inhibitor acarbose in Actinoplanes sp.: 2-epi-5-epi-valiolone is the direct precursor of the valienamine moiety
AUTHOR(S): Mahmud, Taifo; Tornus, Ingo; Egelkrout, Erin; Wolf, Eckardt; Uy, Charmaine; Floss, Heinz G.; Lee, Sungsook
CORPORATE SOURCE: Department of Chemistry, University of Washington, Seattle, WA, 98195-1700, USA
SOURCE: Journal of the American Chemical Society (1999), 121(30), 6973-6983
CODEN: JACSAT; ISSN: 0002-7863
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



I



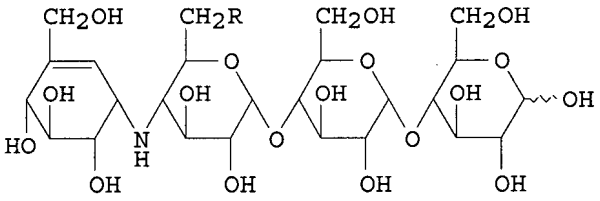
III



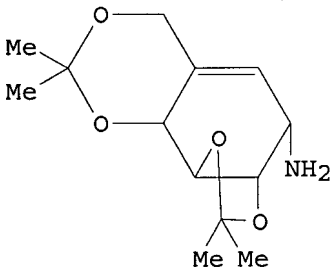
II

AB The biosynthetic pathway leading to the mC7N cyclitol (valienamine, I) moiety of acarbose (II) in Actinoplanes sp. strain SN 223/29 has been studied using 3H-, 2H-, and 13C-labeled cyclitols. These precursors were synthesized from D-glucose or D-mannose as starting materials. The feeding expts. demonstrated that cyclitols having the same stereochem. at C-2 as the I moiety of II, i.e., valienone, I, valiolone, valiolamine, and 1-epi-valienol, were not incorporated and thus are not plausible intermediates in II biosynthesis. 2-Epi-Valiolone, which has the same stereochem. as the presumed open-chain precursor, sedoheptulose 7-phosphate, was also not incorporated. However, its C-5 epimer (III) was incorporated efficiently and specifically into the I moiety of II. Surprisingly, the dehydrated form of III, 2-epi-valienone, was not incorporated. This suggests that III must be converted directly into the pseudodisaccharide moiety of II without the intervention of other free cyclitol intermediates. This may occur by linkage to the amino group of TDP-4-amino-4,6-dideoxyglucose to form the imine, epimerization at C-2 to the correct stereochem., dehydration between C-5 and C-6 aided by enamine formation, and finally reduction to the amine. It is proposed that these reaction steps all take place on a single enzyme without free intermediates. Alternative mechanistic possibilities are also discussed.
REFERENCE COUNT: 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

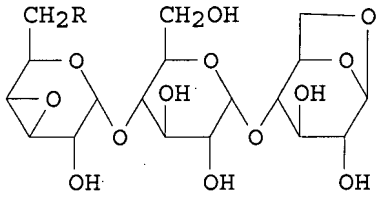
L14 ANSWER 9 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1991:24422 CAPLUS
DOCUMENT NUMBER: 114:24422
TITLE: Synthesis of pseudo-oligosaccharide α-amylase inhibitors: acarbose and adiposin-2
AUTHOR(S): Shibata, Yasushi; Ogawa, Seiichiro
CORPORATE SOURCE: Fac. Sci. Technol., Keio Univ., Yokohama, 223, Japan
SOURCE: Kenkyu Hokoku - Asahi Garasu Kogyo Gijutsu Shoreikai (1989), 54, 1-8
CODEN: AGKGAA; ISSN: 0365-2599
DOCUMENT TYPE: Journal
LANGUAGE: Japanese
GI



I



II



III

AB Acarbose (I; R = H) and adiposin-2 (I; R = OH) were synthesized by coupling the protected valienamine (II) and the epoxides III, prepared from the maltotrioses, followed by deprotection.

L14 ANSWER 10 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1987:493264 CAPLUS
DOCUMENT NUMBER: 107:93264
TITLE: Studies on the biosynthesis of the α-glucosidase inhibitor acarbose: valienamine, a m-C7N unit not derived from the shikimate pathway
AUTHOR(S): Degwert, Ursula; Van Huelst, Rosemarie; Pape, Hermann; Herrold, Richard E.; Beale, John M.; Keller, Paul J.; Lee, Jonathan P.; Floss, Heinz G.
CORPORATE SOURCE: Inst. Mikrobiol., Univ. Muenster, Muenster, Fed. Rep. Ger.
SOURCE: Journal of Antibiotics (1987), 40(6), 855-61
CODEN: JANTAJ; ISSN: 0021-8820
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Feeding expts. with Actinoplanes sp. SN223/29 showed that 3-amino-5-hydroxy-[7-13C]benzoic acid is not incorporated into acarbose (I). The valienamine moiety of I is thus not derived in the same way, from the shikimate pathway, as the m-C7N units in the ansamycin, mitomycin and anasamitocin antibiotics. Feeding expts. with [U-13C3]glycerol followed by anal. of I by multiple quantum NMR

spectroscopy support this conclusion and point to formation of the valienamine moiety by cyclization of a heptulose phosphate which arises from a triose phosphate via successive transfer of two 2-carbon fragments by transketolase.

L14 ANSWER 11 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1985:197982 CAPLUS
DOCUMENT NUMBER: 102:197982
TITLE: Effect of alpha-amylase inhibitors and other compounds on glucosyltransferase activity
AUTHOR(S): Takehara, T.; Newbrun, E.; Hoover, C. I.
CORPORATE SOURCE: Dep. Stomatol., Univ. California, San Francisco, CA, 94143, USA
SOURCE: Caries Research (1985), 19(3), 266-70
CODEN: CAREBK; ISSN: 0008-6568
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Inhibition of glucosyltransferase (EC 2.4.1.5) [9032-14-8] of Streptococcus mutans by α-amylase [9000-90-2] inhibitors was investigated. Acarbose [56180-94-0], 1-deoxynojirimycin [19130-96-2], nojirimycin [15218-38-9], maltose [69-79-4] and valienamine [38231-86-6] inhibited both soluble and insol. glucan formation to various degrees. Several other α-amylase inhibitors tested were inactive. The results indicate that inhibitors of α-amylase do not necessarily inhibit glucosyltransferase. The results are discussed in relation to prevention of caries by the drugs.

L14 ANSWER 12 OF 16 MEDLINE on STN
ACCESSION NUMBER: 2007274053 MEDLINE
DOCUMENT NUMBER: PubMed ID: 17335096
TITLE: ValC, a new type of C7-Cyclitol kinase involved in the biosynthesis of the antifungal agent validamycin A.
AUTHOR: Minagawa Kazuyuki; Zhang Yirong; Ito Takuya; Bai Linquan; Deng Zixin; Mahmud Taifo
CORPORATE SOURCE: Department of Pharmaceutical Sciences, Oregon State University, Corvallis, OR 97331-3507, USA.
CONTRACT NUMBER: AI-061528 (NIAID)
SOURCE: Chembiochem : a European journal of chemical biology, (2007 Apr 16) Vol. 8, No. 6, pp. 632-41.
Journal code: 100937360. ISSN: 1439-4227.
PUB. COUNTRY: Germany: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, N.I.H., EXTRAMURAL)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200706
ENTRY DATE: Entered STN: 9 May 2007
Last Updated on STN: 19 Jun 2007
Entered Medline: 18 Jun 2007
AB The gene valC, which encodes an enzyme homologous to the 2-epi-5-epi-valiolone kinase (AcbM) of the acarbose biosynthetic pathway, was identified in the validamycin A biosynthetic gene cluster. Inactivation of valC resulted in mutants that lack the ability to produce validamycin A. Complementation experiments with a replicating plasmid harboring full-length valC restored the production of validamycin A, thus suggesting a critical function of valC in validamycin biosynthesis. In vitro characterization of ValC revealed a new type of C7-cyclitol kinase, which phosphorylates valienone and validone--but not 2-epi-5-epi-valiolone, 5-epi-valiolone, or glucose--to afford their 7-phosphate derivatives. The results provide new insights into the activity of this enzyme and also confirm the existence of two different pathways leading to the same end-product: the valienamine moiety common to acarbose and validamycin A.

L14 ANSWER 13 OF 16 MEDLINE on STN
ACCESSION NUMBER: 2005287612 MEDLINE
DOCUMENT NUMBER: PubMed ID: 15932287
TITLE: A new method for production of valienamine with microbial degradation of acarbose.
AUTHOR: Chen Xiaolong; Zheng Yuguo; Shen Yinchu
CORPORATE SOURCE: Institute of Bioengineering, Zhejiang University of Technology, Hangzhou 310032, PR China.. richard_chen@zjut.edu.cn
SOURCE: Biotechnology progress, (2005 May-Jun) Vol. 21, No. 3, pp. 1002-3.
Journal code: 8506292. ISSN: 8756-7938.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200509
ENTRY DATE: Entered STN: 4 Jun 2005
Last Updated on STN: 22 Sep 2005
Entered Medline: 21 Sep 2005

AB A new method for the production of valienamine with the microbial degradation of acarbose is described. The microorganism was screened by our laboratory and identified as Stenotrophomonas maltrophilia. After separation, valienamine was analyzed with UV, IR, and 1H and 13C NMR. The yield was more than 60%.

L14 ANSWER 14 OF 16 MEDLINE on STN
ACCESSION NUMBER: 2004404220 MEDLINE
DOCUMENT NUMBER: PubMed ID: 15257419
TITLE: Isolation and characterization of a novel intracellular glucosyltransferase from the acarbose producer Actinoplanes sp. CKD485-16.
AUTHOR: Choi B T; Shin C S
CORPORATE SOURCE: Department of Biotechnology, College of Engineering, Yonsei University, Seodaemun-gu, Seoul, 120-749, South Korea.
SOURCE: Applied microbiology and biotechnology, (2004 Aug) Vol. 65, No. 3, pp. 273-80. Electronic Publication: 2004-07-15.
Journal code: 8406612. ISSN: 0175-7598.
PUB. COUNTRY: Germany: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200410
ENTRY DATE: Entered STN: 14 Aug 2004
Last Updated on STN: 29 Oct 2004
Entered Medline: 28 Oct 2004

AB A novel intracellular glucosyltransferase (GTase) was isolated from cells of Actinoplanes sp. CKD485-16-acarbose-producing cells. The enzyme was purified by DEAE-cellulose and G75-40 Sephadex chromatography. The molecular mass of the enzyme was estimated to be 62 kDa by SDS-polyacrylamide gel electrophoresis, and its isoelectric point (pI) was pH 4.3. The N-terminal sequence of the GTase consisted of NH(2)-Ser-Val-Pro-Leu-Ser-Leu-Pro-Ala-Glu-Trp. The optimum pH and temperature were 7.5 and 30 degrees C. The enzyme was stable in a pH range of 5.5-9.0 and below 40 degrees C. Enzymatic reactions were performed by incubating the GTase with various substrates. The GTase converted acarbose into component C, maltose into trehalose, and maltooligosaccharides into maltooligosyl trehaloses. The reactions were reversible. Various acarbose analogs were tested as inhibitors against the GTase as a means to suppress component C formation. Valienamine was the most potent, with an IC(50) value of 2.4x10(-3) mM and showed a competitive inhibition mode.

L14 ANSWER 15 OF 16 MEDLINE on STN
ACCESSION NUMBER: 2002325354 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11937512
TITLE: Biosynthesis of the C(7)-cyclitol moiety of acarbose in Actinoplanes species SE50/110. 7-O-phosphorylation of the initial cyclitol precursor leads to proposal of a new biosynthetic pathway.
AUTHOR: Zhang Chang-Sheng; Stratmann Ansgar; Block Oliver; Bruckner Ralph; Podeschwa Michael; Altenbach Hans-Josef; Wehmeier Udo F; Piepersberg Wolfgang
CORPORATE SOURCE: Institute of Chemical Microbiology Bergische University, Gauss-Strasse 20, D-42097 Wuppertal, Germany.
SOURCE: The Journal of biological chemistry, (2002 Jun 21) Vol. 277, No. 25, pp. 22853-62. Electronic Publication: 2002-04-05.
Journal code: 2985121R. ISSN: 0021-9258.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200207
ENTRY DATE: Entered STN: 18 Jun 2002
Last Updated on STN: 5 Jan 2003
Entered Medline: 19 Jul 2002

AB We have previously demonstrated that the biosynthesis of the C(7)-cyclitol, called valienol (or valienamine), of the alpha-glucosidase inhibitor acarbose starts from the cyclization of sedo-heptulose 7-phosphate to 2-epi-5-epi-valiolone (Stratmann, A., Mahmud, T., Lee, S., Distler, J., Floss, H. G., and Piepersberg, W. (1999) J. Biol. Chemical 274, 10889-10896). Synthesis of the intermediate 2-epi-5-epi-valiolone is catalyzed by the cyclase AcbC encoded in the biosynthetic (acb) gene cluster of Actinoplanes sp. SE50/110. The acbC gene lies in a possible transcription unit, acbKLMNOC, cluster encompassing putative biosynthetic genes for cyclitol conversion. All genes were heterologously expressed in strains of Streptomyces lividans 66 strains 1326, TK23, and TK64. The AcbK protein was identified as the acarbose 7-kinase, which had been described earlier (Drepper, A., and Pape, H. (1996) J. Antibiot. (Tokyo) 49, 664-668). The multistep conversion of 2-epi-5-epi-valiolone to the final cyclitol moiety was studied by testing enzymatic mechanisms such as dehydration, reduction, epimerization, and phosphorylation. Thus, a phosphotransferase activity was identified modifying 2-epi-5-epi-valiolone by ATP-dependent phosphorylation. This activity could be attributed to the AcbM protein by verifying this activity in S. lividans strain TK64/pCW4123M, expressing His-tagged AcbM. The His-tagged AcbM protein was purified and subsequently characterized as a 2-epi-5-epi-valiolone 7-kinase, presumably catalyzing the first enzyme reaction in the biosynthetic route, leading to an activated form of the intermediate 1-epi-valienol. The AcbK protein could not catalyze the same reaction nor convert any of the other C(7)-cyclitol monomers tested. The 2-epi-5-epi-valiolone 7-phosphate was further converted by the AcbO protein to another isomeric and phosphorylated intermediate, which was likely to be the 2-epimer 5-epi-valiolone 7-phosphate. The products of both enzyme reactions were characterized by mass spectrometric methods. The product of the AcbM-catalyzed reaction, 2-epi-5-epi-valiolone 7-phosphate, was purified on a preparative scale and identified by NMR spectroscopy. A biosynthetic pathway for the pseudodisaccharidic acarviosyl moiety of acarbose is proposed on the basis of these data.

L14 ANSWER 16 OF 16 MEDLINE on STN
ACCESSION NUMBER: 87279505 MEDLINE
DOCUMENT NUMBER: PubMed ID: 3301773
TITLE: Studies on the biosynthesis of the alpha-glucosidase

inhibitor acarbose: valienamine, a m-C7N unit not derived from the shikimate pathway.

AUTHOR: Degwert U; van Hulst R; Pape H; Herrold R E; Beale J M; Keller P J; Lee J P; Floss H G

CONTRACT NUMBER: AI 20264 (NIAID)
GM 10207 (NIGMS)
RR 02231 (NCRR)
+
SOURCE: The Journal of antibiotics, (1987 Jun) Vol. 40, No. 6, pp. 855-61.
Journal code: 0151115. ISSN: 0021-8820.
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198709
ENTRY DATE: Entered STN: 5 Mar 1990
Last Updated on STN: 3 Mar 2000
Entered Medline: 16 Sep 1987

AB Feeding experiments with Actinoplanes sp. SN223/29 showed that 3-amino-5-hydroxy-[7-13C]benzoic acid is not incorporated into acarbose (I). The valienamine moiety of I is thus not derived in the same way, from the shikimate pathway, as the m-C7N units in the ansamycin, mitomycin and ansamitocin antibiotics. Feeding experiments with [U-13C3]-glycerol followed by analysis of I by multiple quantum NMR spectroscopy support this conclusion and point to formation of the valienamine moiety by cyclization of a heptulose phosphate which arises from a triose phosphate via successive transfer of two 2-carbon fragments by transketolase, as proposed by Pape and co-workers.

L14 ANSWER 1 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2007:653555 CAPLUS
TITLE: Development and medical application of unsaturated carbaglycosylamine glycosidase inhibitors
AUTHOR(S): Ogawa, Seiichiro; Kanto, Miki; Suzuki, Yoshiyuki
CORPORATE SOURCE: Department of Biosciences and Informatics, Faculty of Science and Technology, Keio University, Hiyoshi, Kohoku-ku, Yokohama, 223-8522, Japan
SOURCE: Mini-Reviews in Medicinal Chemistry (2007), 7(7), 679-691
CODEN: MMCIAE; ISSN: 1389-5575
PUBLISHER: Bentham Science Publishers Ltd.
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review. This article reviews synthesis and structures of carbaglycosylamines, a group of carbocyclic sugar analogs. Some unsatd. derivs. are known to be potent glycosidase inhibitors. Among them, N-octyl-4-epi-β-valienamine as a lysosomal β-galactosidase inhibitor is currently undergoing a new mol. therapeutic trial (chemical chaperone therapy) for control of the human β-galactosidase deficiency disorder, GM1-gangliosidosis.
REFERENCE COUNT: 71 THERE ARE 71 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 2 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2006:1240277 CAPLUS
DOCUMENT NUMBER: 146:296178
TITLE: Method for preparing valienamine and hydrochloride thereof by treating acarbose with alkyl sulfonic acid or aryl sulfonic acid
INVENTOR(S): Kim, Kyoung Soo; Park, Young Jun
PATENT ASSIGNEE(S): Chirogenix Co., Ltd., S. Korea
SOURCE: Repub. Korean Kongkae Taeho Kongbo, No pp. given
CODEN: KRXXA7
DOCUMENT TYPE: Patent
LANGUAGE: Korean
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
KR 2006065799	A	20060614	KR 2004-104211	20041210
PRIORITY APPLN. INFO.:			KR 2004-104211	20041210

AB A method for preparing valienamine [i.e., (1S,2S,3R,6S)-6-amino-4-(hydroxymethyl)-4-cyclohexene-1,2,3-triol] or a hydrochloride thereof (useful as an intermediate of voglibose, an oral hypoglycemic agent) is claimed. Said method serves to improve cost-efficiency by using a smaller amount of reagents, to increase the purity of the target product and to improve the productivity. The method for preparing valienamine (as represented by a certain formula; no data) or hydrochloride thereof comprises the reaction of acarbose (as represented by a certain formula; no data) [i.e., O-4,6-dideoxy-4-[[(1S,4R,5S,6S)-4,5,6-trihydroxy-3-(hydroxymethyl)-2-cyclohexen-1-yl]amino]-α-D-glucopyranosyl-(1→4)-O-α-D-glucopyranosyl-(1→4)-D-glucose] or a derivative thereof with an alkanesulfonic or arenesulfonic acid. In the above formulas substituent groups may be selected from C1-12 alkyl substituted with cycloalkyl, alkenyl, etc.; Ph substituted with naphthalenyl, etc.; substituted C3-9 heterocyclic aryl etc.; alkoxy, acyloxy, alkylsulfonyl, alkylthio, C1-12 alkyl, C3-7 cycloalkyl, C3-7 alkenyl, etc. (incomplete list). More narrow definitions are indicated; however, specific chemical structures and/or addnl. information are not provided here.

L14 ANSWER 3 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2006:592429 CAPLUS
DOCUMENT NUMBER: 145:242594
TITLE: Genetic localization and heterologous expression of validamycin biosynthetic gene cluster isolated from Streptomyces hygroscopicus var. limoneus KCCM 11405 (IFO 12704)
AUTHOR(S): Singh, Deepak; Seo, Myung-Ji; Kwon, Hyung-Jin; Rajkarnikar, Arishma; Kim, Kyoung-Rok; Kim, Soon-Ok; Suh, Joo-Won
CORPORATE SOURCE: Department of Biological Science, Institute of Bioscience and Biotechnology, Myongji University, Yongin, 449-728, S. Korea
SOURCE: Gene (2006), 376(1), 13-23
CODEN: GENED6; ISSN: 0378-1119
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The validamycin biosynthetic gene cluster was isolated from Streptomyces hygroscopicus var. limoneus KTCC 1715 (IFO 12704) using a pair of degenerated PCR primers designed from the sequence of AcbC, 2-epi-5-epi-valiolone synthase in the acarbose biosynthesis. The nucleotide sequence anal. of the 37-kb DNA region revealed 22 complete ORFs including vldA, the acbC ortholog. Located around vldA, vldB to K were predicted to encode adenyltransferase, kinase, ketoreductase (or epimerase/dehydratase), glycosyltransferase, aminotransferase, dehydrogenase, phosphatase/phosphomutase, glycosyl hydrolase, transport protein, and glycosyltransferase, resp. Apparently absent were any regulatory components within the sequenced region. The disruption of vldA abolished the validamycin biosynthesis and the plasmid-based complementation with vldABC restored production to the vldA-mutant; this substantiated that vldABC are essential to validamycin biosynthesis. This finding enabled us to discover the complete validamycin biosynthetic cluster. The cosmid clone of pJWS3001 harboring the 37-kb DNA region conferred validamycin-accumulation to Streptomyces lividans, indicating that the entire gene cluster of validamycin biosynthesis had been isolated. Addnl., Streptomyces albus, transformed with pJWS3001, produced a high level of α-glucosidase inhibitory activity in a R2YE liquid culture, which highlights the portability of the cluster within Streptomyces. The product of vldI was characterized as a glucoamylase (kcat, 32 s-1; Km, 5 mg/mL of starch) that does not play any apparent role in the validamycin biosynthesis. In order to characterize the upstream region, a vldW knockout was achieved via gene-replacement. A phenotypic study of the resulting mutant revealed that vldW is not essential for the host's ability to control Pellicularia filamentosa growth. The current information suggests that vldA to vldH is the genetic region essential to validamycin biosynthesis. This promises excellent opportunities to elucidate biosynthetic route(s) to the validamycin complex and to engineer the pathway for industrial application.

REFERENCE COUNT: 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 4 OF 16 CAPLUS
ACCESSION NUMBER: 2006:251176 CAPLUS
DOCUMENT NUMBER: 144:310615
TITLE: Method for manufacturing valienamine by degrading acarbose and its derivatives with microorganism
INVENTOR(S): Zheng, Yuguo; Xue, Yaping; Wang, Yuanshan; Chen, Xiaolong; Shen, Yinchu
PATENT ASSIGNEE(S): Zhejiang University of Technology, Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 13 pp.
CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese

FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1740332	A	20060301	CN 2005-10060638	20050906
PRIORITY APPLN. INFO.:			CN 2005-10060638	20050906

AB The title microorganism is Klebsiella oxytoca (CCTCC No.M 205091), which is capable of cracking acarbose and/or its derivs. to manufacture valienamine. The title method comprises fermenting a medium containing acarbose and/or its derivs. by Klebsiella oxytoca and separating to obtain valienamine.

L14 ANSWER 5 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:644388 CAPLUS
DOCUMENT NUMBER: 142:256576
TITLE: Isolation and characterization of a novel intracellular glucosyltransferase from the acarbose producer Actinoplanes sp. CKD485-16
AUTHOR(S): Choi, B. T.; Shin, C. S.
CORPORATE SOURCE: Department of Biotechnology, College of Engineering, Yonsei University, Seoul, 120-749, S. Korea
SOURCE: Applied Microbiology and Biotechnology (2004), 65(3), 273-280
CODEN: AMBIDG; ISSN: 0175-7598
PUBLISHER: Springer GmbH
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A novel intracellular glucosyltransferase (GTase) was isolated from cells of Actinoplanes sp. CKD485-16-acarbose-producing cells. The enzyme was purified by DEAE-cellulose and G75-40 Sephadex chromatog. The mol. mass of the enzyme was estimated to be 62 kDa by SDS-PAGE, and its isoelec. point (pI) was pH 4.3. The N-terminal sequence of the GTase consisted of NH2-Ser-Val-Pro-Leu-Ser-Leu-Pro-Ala-Glu-Trp. The optimum pH and temperature were 7.5 and 32°. The enzyme was stable in a pH range of 5.5-9.0 and below 40°. Enzymic reactions were performed by incubating the GTase with various substrates. The GTase converted acarbose into component C, maltose into trehalose, and maltooligosaccharides into maltooligosyl trehaloses. The reactions were reversible. Various acarbose analogs were tested as inhibitors against the GTase as a means to suppress component C formation. Valienamine was the most potent, with an IC50 value of 2.4+10-3 mM and showed a competitive inhibition mode.
REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 6 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:636430 CAPLUS
DOCUMENT NUMBER: 142:232316
TITLE: Computer-aided molecular design of novel glucosidase inhibitors for AIDS treatment
AUTHOR(S): Silva, C. H. T. P.; Taft, C. A.
CORPORATE SOURCE: Departamento de Ciencias Farmaceuticas, Faculdade de Ciencias Farmaceuticas de Ribeirao Preto, Universidade de Sao Paulo, Ribeirao Preto, 14040-903, Brazil
SOURCE: Journal of Biomolecular Structure & Dynamics (2004), 22(1), 59-64
CODEN: JBSDD6; ISSN: 0739-1102
PUBLISHER: Adenine Press
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Since the onset of the AIDS epidemic, some 20 million people have died and the estimate is that today close to 40 million are living with type 1 human immunodeficiency virus (HIV)/AIDS. About 14 thousands people are infected

worldwide daily with this disease. Still, only a few pharmaceuticals are available for AIDS chemotherapy. Some pharmaceuticals act against the virus before the entrance of the HIV into the host cells. One of these targets is the glucosidase protein. This class of enzymes has been recently explored because the synthesis of viral glycoproteins depends on the activity of enzymes, such as glucosidase and transferase, for the elaboration of the polysaccharides. In this work we study several glucosidase inhibitors. The DFT method is used to compute atomic charges and the ligand/receptor interaction was simulated with docking software. Anal. of the interactions of the proposed pharmaceutical, a pseudo-disaccharide, with the Thermotoga maritima 4-alpha-glucanotransferase in complex with modified acarbose, the scores from docking as well as the graphical superposition of all the ligands, suggest that our mol. designed pseudo-disaccharide may be a potent glucosidase inhibitor.

REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 7 OF 16 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2003:623109 CAPLUS

DOCUMENT NUMBER: 139:349688

TITLE: Reduced Formation of Byproduct Component C in Acarbose Fermentation by Actinoplanes sp. CKD485-16

AUTHOR(S): Choi, Byoung Taek; Shin, Chul Soo

CORPORATE SOURCE: Department of Biotechnology College of Engineering, Yonsei University, Seoul, 120-749, S. Korea

SOURCE: Biotechnology Progress (2003), 19(6), 1677-1682
CODEN: BIPRET; ISSN: 8756-7938

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 139:349688

AB Acarbose fermentation was conducted by cultivation of Actinoplanes sp. CKD485-16. Approx. 2,300 mg/L of acarbose was produced at the end of cultivation along with 600 mg/L of the acarbose byproduct component C. Maltose, a known moiety of acarbose, should be maintained at high concentration levels in culture broths for efficient acarbose production The acarbose yield increased with an increasing osmolality of the culture medium, with a maximum value of 3,200 mg/L obtained at 500 mOsm/kg. Component C was also produced in proportion to the osmolality. Conversion of acarbose to component C was accomplished with resting whole cells. Inhibitors of the conversion of acarbose to component C were sought since component C is probably derived from acarbose. Valienamine was found to be a potent inhibitor, resulting in a more than 90% reduction in component C formation at a 10 μM concentration Effects were similar in a 1,500-L pilot fermentor with acarbose and component C yields of 3,490 and 43 mg/L at 500 mOsm/kg, resp.

REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:440618 CAPLUS
DOCUMENT NUMBER: 141:49832
TITLE: Quantification of Acarbose in Human Plasma by Liquid Chromatography-Electrospray Tandem Mass Spectrometry
AUTHOR(S): Raut, B. B.; Kolte, B. L.; Deo, A. A.; Bagool, M. A.; Shinde, D. B.
CORPORATE SOURCE: Wockhardt Research Centre, Maharashtra, India
SOURCE: Journal of Liquid Chromatography & Related Technologies (2004), 27(11), 1759-1768
CODEN: JLCTFC; ISSN: 1082-6076
PUBLISHER: Marcel Dekker, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The method for the determination of acarbose in human plasma is described, using HPLC separation with tandem mass spectrometric detection. Samples were prepared using solid phase extraction and separated on a Zorbax SB C18 column with a mobile phase consisting of H2O, MeCN, and trifluoroacetic acid. Detection was performed by a TSQ quantum mass spectrometer in the selected reaction monitoring (SRM) mode using electrospray ionization (ESI). The method has a chromatog. elution time of 3 min and was linear within the range of 100-1000 ng/mL. The intra- and inter-run accuracy and precision, calculated from quality control (QC) samples, was <11%.
REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:2831 CAPLUS
DOCUMENT NUMBER: 140:59898
TITLE: Hydrolytic preparation of valienamine from acarbose and/or acarbose derivatives using aqueous trifluoroacetic acid
INVENTOR(S): Her, Youl; Oh, Jin-Hwan
PATENT ASSIGNEE(S): B T Gin., Inc., S. Korea
SOURCE: PCT Int. Appl., 14 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004000782	A1	20031231	WO 2002-KR2198	20021123
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
KR 2004002339	A	20040107	KR 2002-51511	20020829
AU 2002368036	A1	20040106	AU 2002-368036	20021123
EP 1539672	A1	20050615	EP 2002-790977	20021123
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
CN 1630630	A	20050622	CN 2002-829209	20021123
JP 2005530839	T	20051013	JP 2004-515194	20021123

IN 2004KN01947	A	20051230	IN 2004-KN1947		20041217
US 2005272674	A1	20051208	US 2005-519519		20050801
PRIORITY APPLN. INFO.:			KR 2002-35683	A	20020625
			KR 2002-51511	A	20020829
			WO 2002-KR21983	W	20020101
			WO 2002-KR2198	W	20021123

AB A method for the preparation of valienamine from acarbose and/or acarbose derivs. (e.g., disaccharide or trisaccharide) is described using aqueous trifluoroacetic acid to effect an acidic hydrolysis of the acarbose or its derivative so as to give valienamine in high yield and selectivity.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:2831 CAPLUS
DOCUMENT NUMBER: 140:59898
TITLE: Hydrolytic preparation of valienamine from acarbose and/or acarbose derivatives using aqueous trifluoroacetic acid
INVENTOR(S): Her, Youl; Oh, Jin-Hwan
PATENT ASSIGNEE(S): B T Gin., Inc., S. Korea
SOURCE: PCT Int. Appl., 14 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004000782	A1	20031231	WO 2002-KR2198	20021123
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
KR 2004002339	A	20040107	KR 2002-51511	20020829
AU 2002368036	A1	20040106	AU 2002-368036	20021123
EP 1539672	A1	20050615	EP 2002-790977	20021123
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
CN 1630630	A	20050622	CN 2002-829209	20021123
JP 2005530839	T	20051013	JP 2004-515194	20021123
IN 2004KN01947	A	20051230	IN 2004-KN1947	20041217
US 2005272674	A1	20051208	US 2005-519519	20050801

PRIORITY APPLN. INFO.:

KR 2002-35683	A	20020625
KR 2002-51511	A	20020829
WO 2002-KR21983	W	20020101
WO 2002-KR2198	W	20021123

AB A method for the preparation of valienamine from acarbose and/or acarbose derivs. (e.g., disaccharide or trisaccharide) is described using aqueous trifluoroacetic acid to effect an acidic hydrolysis of the acarbose or its derivative so as to give valienamine in high yield and selectivity.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L23 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1999:67741 CAPLUS
DOCUMENT NUMBER: 130:293127
TITLE: Effect of chemical modification of cyclodextrin glycosyltransferase (CGTase) from Thermoanaerobacter sp. on its activity and product selectivity
AUTHOR(S): Alcalde, Miguel; Plou, Francisco J.; Pastor, Eitel; Ballesteros, Antonio
CORPORATE SOURCE: Department of Biocatalysis, C.S.I.C. Institute of Catalysis, Madrid, 28049, Spain
SOURCE: Annals of the New York Academy of Sciences (1998), 864(Enzyme Engineering XIV), 183-187
CODEN: ANYAA9; ISSN: 0077-8923
PUBLISHER: New York Academy of Sciences
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Chemical modification of carboxyl groups (Asp or Glu) of CGTase from Thermoanaerobacter sp. (which contains 43 Asp and 17 Glu residues) was carried out with glycyl Et ester in the presence of acarbose to protect carboxyl groups near the active site. The number of Gly residues introduced per mol of enzyme was calculated from the addnl. covalently bound glycine as determined by amino acid anal. The degree of substitution was estimated to be 15%, implying that .apprx.9 carboxyl groups (neg. charged) were converted into neutral (Asp-Gly of Glu-Gly) moieties. The initial formation of β- and γ-cyclodextrin (CD) was slightly reduced on chemical modification, whereas the hydrolytic and disproportionation activities of CGTase remained almost constant Enzyme thermostability was slightly decreased upon chemical modification. It was concluded that there must exist ≥1 carboxyl group(s) in Thermoanaerobacter CGTase involved in the specific interactions that affect the α:β:γ CD ratio (especially at low reaction times). Exploration by computational anal. of the most accessible Glu and Asp residues for modification in this CGTase suggested as the most obvious candidates the following residues: Glu-146, Asp-148, Asp-196, and Asp-370.
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L30 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:2831 CAPLUS
DOCUMENT NUMBER: 140:59898
TITLE: Hydrolytic preparation of valienamine from acarbose and/or acarbose derivatives using aqueous trifluoroacetic acid
INVENTOR(S): Her, Youl; Oh, Jin-Hwan
PATENT ASSIGNEE(S): B T Gin., Inc., S. Korea
SOURCE: PCT Int. Appl., 14 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004000782	A1	20031231	WO 2002-KR2198	20021123
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
KR 2004002339	A	20040107	KR 2002-51511	20020829
AU 2002368036	A1	20040106	AU 2002-368036	20021123
EP 1539672	A1	20050615	EP 2002-790977	20021123
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
CN 1630630	A	20050622	CN 2002-829209	20021123
JP 2005530839	T	20051013	JP 2004-515194	20021123
IN 2004KN01947	A	20051230	IN 2004-KN1947	20041217
US 2005272674	A1	20051208	US 2005-519519	20050801

PRIORITY APPLN. INFO.:

KR 2002-35683	A	20020625
KR 2002-51511	A	20020829
WO 2002-KR21983	W	20020101
WO 2002-KR2198	W	20021123

AB A method for the preparation of valienamine from acarbose and/or acarbose derivs. (e.g., disaccharide or trisaccharide) is described using aqueous trifluoroacetic acid to effect an acidic hydrolysis of the acarbose or its derivative so as to give valienamine in high yield and selectivity.
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L32 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:1074181 CAPLUS
DOCUMENT NUMBER: 142:23470
TITLE: Preparation method of valienamine via selective hydrolysis of acarbose, validamycin, and validoxylamine derivatives using exchange resins or zeolite as catalysts
INVENTOR(S): Hur, Yul; Oh, Jin-Hwan; Park, Young-Il
PATENT ASSIGNEE(S): B T Gin., Inc., S. Korea
SOURCE: PCT Int. Appl., 16 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004108657	A1	20041216	WO 2003-KR2657	20031205
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
KR 2004106192	A	20041217	KR 2003-38671	20030616
AU 2003304178	A1	20050104	AU 2003-304178	20031205
CN 1849297	A	20061018	CN 2003-80110343	20031205
JP 2006527165	T	20061130	JP 2005-500590	20031205

PRIORITY APPLN. INFO.:
KR 2003-37561 A 20030611
KR 2003-38671 A 20030616
WO 2003-KR2657 W 20031205

OTHER SOURCE(S): CASREACT 142:23470
AB Disclosed is a preparation method of valienamine using solid catalysts. The valienamine, which has strong inhibiting activity, is prepared by selective hydrolysis of acarbose and acarbose derivs., validamycin and validamycin derivs., validamycin and validamycin derivs., or validoxylamine and validoxylamine derivs. In the present invention, a solid catalyst such as a strong acidic cation exchange resin, a strong basic anion exchange resin or zeolite is used.
REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L32 ANSWER 2 OF 3 MEDLINE on STN
ACCESSION NUMBER: 92315854 MEDLINE
DOCUMENT NUMBER: PubMed ID: 1352226
TITLE: Alpha-glucoside formation of xenobiotics by rat liver alpha-glucosidases.
AUTHOR: Kamimura H; Ogata H; Takahara H
CORPORATE SOURCE: Department of Biopharmaceutics, Meiji College of Pharmacy.
SOURCE: Drug metabolism and disposition: the biological fate of chemicals, (1992 Mar-Apr) Vol. 20, No. 2, pp. 309-15.
Journal code: 9421550. ISSN: 0090-9556.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199208
ENTRY DATE: Entered STN: 15 Aug 1992

Last Updated on STN: 6 Feb 1995
Entered Medline: 6 Aug 1992

AB We investigated enzymes participating in alpha-glucoside formation, a novel metabolic pathway of xenobiotics in a metabolic study of indeloxazine hydrochloride in rats. When rat tissue homogenates and the indeloxazine metabolite trans-4-(2-morpholinylmethoxy)-1,2-indandiol (M-2) were incubated, M-2-alpha-glucoside formation was observed in liver. This reaction was almost completely inhibited by the alpha-glucosidase inhibitor acarbose. The liver homogenate was then separated into subcellular fractions and an acid alpha-glucosidase in lysosomes and two neutral alpha-glucosidases in microsomes and cytosol were partially purified. The chromatographic behavior and optimum pH of the glucosyltransferase activity of each of the enzyme preparations were almost identical with those of alpha-glucosidase (hydrolase) activity of the same specimen, suggesting the former activity to be also due to alpha-glucosidase. Agreeing with their hydrolytic substrate specificities, the acid enzyme transferred glucose to M-2 from a series of glucose derivatives, ranging from low molecular maltosaccharides to high molecular glycogen, whereas the neutral enzymes took only low molecular maltosaccharides as glucosyl donors. These results led to the conclusion that the formation of alpha-glucoside conjugates is catalyzed by more than one alpha-glucosidase in the liver and uses maltosaccharides or glycogen as glucosyl donors. Several other diol structure-bearing compounds were found in vitro to give rise to alpha-glucoside conjugates, and the mechanism of alpha-glucoside formation is discussed.

L32 ANSWER 3 OF 3 MEDLINE on STN
ACCESSION NUMBER: 90299852 MEDLINE
DOCUMENT NUMBER: PubMed ID: 2193931
TITLE: Lysosomal glycogen accumulation in rat liver and its in vivo kinetics after a single intraperitoneal injection of acarbose, an alpha-glucosidase inhibitor.
AUTHOR: Konishi Y; Okawa Y; Hosokawa S; Fujimori K; Fuwa H
CORPORATE SOURCE: Department of Food and Nutrition, Faculty of Science of Living, Osaka City University.
SOURCE: Journal of biochemistry, (1990 Feb) Vol. 107, No. 2, pp. 197-201.
Journal code: 0376600. ISSN: 0021-924X.
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199008
ENTRY DATE: Entered STN: 7 Sep 1990
Last Updated on STN: 3 Mar 2000
Entered Medline: 6 Aug 1990

AB A single intraperitoneal injection of acarbose (400 mg/kg) into rats caused lysosomal accumulation of glycogen in the liver, mimicking the cytological characteristics of human glycogen storage disease type II (Pompe's disease). The animal model is therefore useful for studying the pathogenesis of the disease. In the present study, we applied this model to examine the lysosomal hydrolytic pathway of glycogen in vivo. To quantify the lysosomal glycogen, the lysosome-rich fraction was rapidly prepared from liver homogenate by agglutination in the presence of Ca2+. Then the fraction was treated with alpha-amylase in isotonic medium to remove cytosolic glycogen, followed by transfer to hypotonic conditions in the presence of Triton X-100 to destroy total glycogen. The amount of lysosomal glycogen was calculated from the difference between the glycogen levels measured before and after the treatment under hypotonic conditions, and then it was corrected based on measurements of the intactness (%) of lysosomes and the recovery (%) of the lysosomal marker enzyme (beta NAGase). We observed no measurable lysosomal glycogen in normal liver by this method, and this was confirmed by electron microscopy. After

administration of acarbose, the lysosomal glycogen level increased to 2.5 mg/g liver within 2 days, and then decreased gradually at a rate of 0.4 mg/day/g. The accumulation of glycogen in the lysosomes at an initial velocity of 1.5 mg/day/g liver may be considered as the amount of glycogen that would normally be degraded by acid alpha-glucosidase. Therefore, assuming that the liver breaks down about 40 mg glycogen/day/g, we estimated that about 3% of the glycogen would be hydrolyzed by the lysosomal pathway.

L33 ANSWER 10 OF 58 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2001:501855 CAPLUS
DOCUMENT NUMBER: 135:223359
TITLE: Stability and Function of Interdomain Linker Variants of Glucoamylase 1 from Aspergillus niger
AUTHOR(S): Sauer, Jorgen; Christensen, Trine; Frandsen, Torben P.; Mirgorodskaya, Ekaterina; McGuire, Kirsten A.; Driguez, Hugues; Roepstorff, Peter; Sigurskjold, Bent W.; Svensson, Birte
CORPORATE SOURCE: Department of Chemistry, Carlsberg Laboratory, Copenhagen Valby, DK-2500, Den.
SOURCE: Biochemistry (2001), 40(31), 9336-9346
CODEN: BICHAW; ISSN: 0006-2960
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Several variants of glucoamylase 1 (GA1) from Aspergillus niger were created in which the highly O-glycosylated peptide (aa 468-508) connecting the (α/α)6-barrel catalytic domain and the starch binding domain was substituted at the gene level by equivalent segments of glucoamylases from Hormoconis resinae, Humicola grisea, and Rhizopus oryzae encoding 5, 19, and 36 amino acid residues. Variants were constructed in which the H. resinae linker was elongated by proline-rich sequences as this linker itself apparently was too short to allow formation of the corresponding protein variant. Size and isoelec. point of GA1 variants reflected differences in linker length, posttranslational modification, and net charge. While calculated polypeptide chain mol. masses for wild-type GA1, a nonnatural proline-rich linker variant, H. grisea, and R. oryzae linker variants were 65 784, 63 777, 63 912, and 65 614 Da, resp., MALDI-TOF-MS gave values of 82,042, 73,800, 73,413, and 90,793 Da, resp., where the latter value could partly be explained by an N-glycosylation site introduced near the linker C-terminus. The kcat and Km for hydrolysis of maltooligodextrins and soluble starch, and the rate of hydrolysis of barley starch granules were essentially the same for the variants as for wild-type GA1. β-Cyclodextrin, acarbose, and two heterobidentate inhibitors were found by isothermal titration calorimetry to bind to the catalytic and starch binding domains of the linker variants, indicating that the function of the active site and the starch binding site was maintained. The stability of GA1 linker variants toward GdnHCl and heat, however, was reduced compared to wild-type.
REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L33 ANSWER 11 OF 58 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2001:155059 CAPLUS
DOCUMENT NUMBER: 135:147207
TITLE: Inhibitory effect and mechanism of acarbose combined with gymnemic acid on maltose absorption in rat intestine
AUTHOR(S): Luo, Hong; Wang, Le Feng; Imoto, Toshiaki; Hiji, Yasutake
CORPORATE SOURCE: Departments of Physiology, Faculty of Medicine, Tottori University, Yonago, 683-0826, Japan
SOURCE: World Journal of Gastroenterology (2001), 7(1), 9-15
CODEN: WJGAF2; ISSN: 1007-9327
PUBLISHER: World Journal of Gastroenterology
DOCUMENT TYPE: Journal
LANGUAGE: English
AB AIM To compare the combinative and individual effect of acarbose and gymnemic acid (GA) on maltose absorption and hydrolysis in small intestine to determine whether nutrient control in diabetic care can be improved by combination of them. METHODS The

absorption and hydrolysis of maltose were studied by cyclic perfusion of intestinal loops in situ and motility of the intestine was recorded with the intestinal ring in vitro using Wistar rats. RESULTS The total inhibitory rate of maltose absorption was improved by the combination of GA (0.1 g/L - 1.0 g/L) and acarbose (0.1 mmol/L - 2.0 mmol/L) throughout their effective duration ($P<0.05$, U test of Mann-Whitney), although the improvement only could be seen at a low dosage during the first hour. With the combination, inhibitory duration of acarbose on maltose absorption was prolonged to 3 h and the inhibitory effect onset of GA was fastened to 15min. GA suppressed the intestinal mobility with a good correlation ($r=0.98$) to the inhibitory effect of GA on maltose absorption and the inhibitory effect of 2 mmol/L (high dose) acarbose on maltose hydrolysis was dual modulated by 1 g/L GA in vivo indicating that the combined effects involved the functional alteration of intestinal barriers. CONCLUSION There are augmented effects of acarbose and GA, which involve pre-cellular and paracellular barriers. Diabetic care can be improved by employing the combination.

REFERENCE COUNT: 54 THERE ARE 54 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L33 ANSWER 12 OF 58 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2000:353512 CAPLUS
DOCUMENT NUMBER: 133:146716
TITLE: Purification, enzymatic characterization, and nucleotide sequence of a high-isoelectric-point α-glucosidase from barley malt
AUTHOR(S): Frandsen, Torben Peter; Lok, Finn; Mirgorodskaya, Ekaterina; Roepstorff, Peter; Svensson, Birte
CORPORATE SOURCE: Department of Chemistry, Carlsberg Laboratory, Copenhagen, DK-2500, Den.
SOURCE: Plant Physiology (2000), 123(1), 275-286
CODEN: PLPHAY; ISSN: 0032-0889
PUBLISHER: American Society of Plant Physiologists
DOCUMENT TYPE: Journal
LANGUAGE: English

AB High-isoelec.-point (pI) α-glucosidase was purified 7,300-fold from an extract of barley (Hordeum vulgare) malt by ammonium sulfate fractionation, ion-exchange, and butyl-Sepharose chromatog. The enzyme had high activity toward maltose (kcat = 25 s-1), with an optimum at pH 4.5, and catalyzed the hydrolysis by a retaining mechanism, as shown by NMR. Acarbose was a strong inhibitor (Ki = 1.5 μM). Mol. recognition revealed that all OH-groups in the non-reducing ring and OH-3 in the reducing ring of maltose formed important hydrogen bonds to the enzyme in the transition state complex. Mass spectrometry of tryptic fragments assigned the 92-kD protein to a barley cDNA (GenBank accession number U22450) that appears to encode an α-glucosidase. A corresponding sequence (HvAgl97; GenBank accession number AF118226) was isolated from a genomic phage library using a cDNA fragment from a barley cDNA library. HvAgl97 encodes a putative 96.6-kD protein of 879 amino acids with 93.8% identity to the protein deduced from U22450. The sequence contains two active site motifs of glycoside hydrolase family 31. Three introns of 86 to 4,286 bp interrupt the coding region. The four exons vary from 218 to 1,529 bp. Gene expression anal. showed that transcription reached a maximum 48 h after the start of germination.

REFERENCE COUNT: 63 THERE ARE 63 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L33 ANSWER 13 OF 58 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2000:211103 CAPLUS
DOCUMENT NUMBER: 133:39834
TITLE: Subsite Mapping of the Human Pancreatic α-Amylase Active Site through Structural, Kinetic, and Mutagenesis Techniques

AUTHOR(S): Brayer, Gary D.; Sidhu, Gary; Maurus, Robert; Rydberg, Edwin H.; Braun, Curtis; Wang, Yili; Nguyen, Nham T.; Overall, Christopher M.; Withers, Stephen G.
CORPORATE SOURCE: Department of Biochemistry and Molecular Biology, University of British Columbia, Vancouver, V6T 1Z3, Can.
SOURCE: Biochemistry (2000), 39(16), 4778-4791
CODEN: BICHAW; ISSN: 0006-2960
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB We report a multifaceted study of the active site region of human pancreatic α-amylase. Through a series of novel kinetic analyses using malto-oligosaccharides and malto-oligosaccharyl fluorides, an overall cleavage action pattern for this enzyme has been developed. The preferred binding/cleavage mode occurs when a maltose residue serves as the leaving group (aglycon sites +1 and +2) and there are three sugars in the glycon (-1, -2, -3) sites. Overall it appears that five binding subsites span the active site, although an addnl. glycon subsite appears to be a significant factor in the binding of longer substrates. Kinetic parameters for the cleavage of substrates modified at the 2 and 4'' positions also highlight the importance of these hydroxyl groups for catalysis and identify the rate-determining step. Further kinetic and structural studies pinpoint Asp197 as being the likely nucleophile in catalysis, with substitution of this residue leading to an .apprx.106-fold drop in catalytic activity. Structural studies show that the original pseudo-tetrasaccharide structure of acarbose is modified upon binding, presumably through a series of hydrolysis and transglycosylation reactions. The end result is a pseudo-pentasaccharide moiety that spans the active site region with its N-linked "glycosidic" bond positioned at the normal site of cleavage. Interestingly, the side chains of Glu233 and Asp300, along with a water mol., are aligned about the inhibitor N-linked glycosidic bond in a manner suggesting that these might act individually or collectively in the role of acid/base catalyst in the reaction mechanism. Indeed, kinetic analyses show that substitution of the side chains of either Glu233 or Asp300 leads to as much as a .apprx.103-fold decrease in catalytic activity. Structural analyses of the Asp300Asn variant of human pancreatic α-amylase and its complex with acarbose clearly demonstrate the importance of Asp300 to the mode of inhibitor binding.

REFERENCE COUNT: 48 THERE ARE 48 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L33 ANSWER 14 OF 58 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1999:492838 CAPLUS
DOCUMENT NUMBER: 132:58681
TITLE: Acidic degradation of acarbose, its concentration in serum, urine and feces and its metabolic effects in streptozotocin - induced diabetic rats
AUTHOR(S): Ismail, S. A.; Shafik, Mohga; Hussain, Sherifa S.
CORPORATE SOURCE: Dept. of Biochem, Fac. of Agric., Cairo Univ., Cairo, Egypt
SOURCE: Egyptian Journal of Biochemistry (1999), 17(1), 43-71
CODEN: EGJBE4; ISSN: 1012-554X
PUBLISHER: Egyptian Biochemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The acidic hydrolysis of acarbose was studied by incubation acarbose in an acidic medium (pH 1) and measuring the produced glucose, estimating the inhibiting effect of the unhydrolyzed acarbose on the pancreatic α-amylase activity and by studying the products of hydrolysis by GLC. These results indicated that after incubation periods of 30, 60, 90 and 120 min., about 24.6, 34.4, 35.8 and 37% of the total acarbose were

partially hydrolyzed to glucoacarviosine + glucose and about 0.2, 1.1, 2.2 and 4% were completely hydrolyzed to acarviosine + 2 glucose units, resp. Maltose was not detected in gas liquid chromatogram. The percentage of inhibition of α-amylase activity in the presence of a constant level of both acarbose and starch was 83.3, 80.8, 65.8 and 51.1% when wheat bread, corn starch, faba bean and lentil had been used as substrates, resp. After feeding of acarbose (200 mg/kg diet) into rats for 45 days and at the end of experiment, the concentration of acarbose in plasma, urine and feces was 2.24 mg/mL, 0.733 mg/mL and 1.656 mg/g fresh weight in normal rat and 2.467 mg/mL, 0.58 mg/mL and 1.964 mg/g fresh weight in diabetic rats, resp. The plasma protein-binding acarbose was 0.17 and 0.2 mg/mL plasma in both normal and diabetic rats, resp. Acarbose decreased the plasma cholesterol, insulin and hepatic glycogen in normal and diabetic rats. While plasma glucose, triglycerides, phospholipids and total lipids were decreased in diabetic rats only. No significant changes in liver and renal functions were observed in rats after administration of acarbose. Plasma protein patterns of rats and histopathol. studies on intestine, liver and kidneys were performed. Ki value (the inhibitor constant) for acarbose as a competitive inhibitor of the pancreatic α-amylase in the presence of triazine blue as a substrate was 13 nM. In addition, 1.78 ng of acarbose was required to do 50% inhibition for one IU of α-amylase.

REFERENCE COUNT: 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L33 ANSWER 15 OF 58 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1999:251450 CAPLUS
DOCUMENT NUMBER: 130:312000
TITLE: Synthesis of [7-3H]valienamine, [7-3H]valienone, [7-3H]valiolamine and [7-3H]valiolone from validamycin A
AUTHOR(S): Lee, Sungsook; Tornus, Ingo; Dong, Haijun; Groger, Stefan
CORPORATE SOURCE: Department of Chemistry, University of Washington, Seattle, WA, 98195-1700, USA
SOURCE: Journal of Labelled Compounds & Radiopharmaceuticals (1999), 42(4), 361-372
CODEN: JLCRD4; ISSN: 0362-4803
PUBLISHER: John Wiley & Sons Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB To investigate the biosynthetic pathway to the cyclitol moieties of acarbose and validamycin A, [7-3H]valienamine, [7-3H]valienone, [7-3H]valiolamine and [7-3H]valiolone were synthesized as plausible precursors. Valienamine together with validamine was isolated from the degradation of validamycin A by Flavobacterium saccharophilum and served as starting material for the synthesis. Validamine was removed partially at the stage of tritylation and completely after the oxidation of the primary hydroxy group at C-7 to the aldehyde. The resulting valienamine aldehyde was reduced with tritiated sodium borohydride to produce [7-3H]valienamine. The latter was converted to [7-3H]valiolamine by a synthetic route described in the literature. The 3H-labeled amines were oxidized to [7-3H]valienone and [7-3H]valiolone, resp., using 3,5-di-tert-butyl-1,2-benzoquinone (DBQ) followed by hydrolysis with oxalic acid.
REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L33 ANSWER 16 OF 58 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1999:232868 CAPLUS
DOCUMENT NUMBER: 131:55617
TITLE: Modes of action of acarbose hydrolysis and

transglycosylation catalyzed by a thermostable maltogenic amylase, the gene for which was cloned from a Thermus strain

AUTHOR(S): Kim, Tae-Jip; Kim, Myo-Jeong; Kim, Byung-Cheon; Kim, Jae-Cherl; Cheong, Tae-Kyou; Kim, Jung-Wan; Park, Kwan-Hwa

CORPORATE SOURCE: Department of Food Science and Technology and Research Center for New Bio-Materials in Agriculture, Seoul National University, Suwon, 441-744, S. Korea

SOURCE: Applied and Environmental Microbiology (1999), 65(4), 1644-1651
CODEN: AEMIDF; ISSN: 0099-2240

PUBLISHER: American Society for Microbiology

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A maltogenic amylase gene was cloned in Escherichia coli from a gram-neg. thermophilic bacterium, Thermus strain IM6501. The gene encoded an enzyme (ThMA) with a mol. mass of 68 kDa which was expressed by the expression vector p6xHis119. The optimal temperature of ThMA was 60°, which was higher than those of other maltogenic amylases reported so far. Thermal inactivation kinetic anal. of ThMA indicated that it was stabilized in the presence of 10 mM EDTA. ThMA harbored both hydrolysis and transglycosylation activities. It hydrolyzed β-cyclodextrin and starch mainly to maltose and pullulan to panose. ThMA not only hydrolyzed acarbose, an amylase inhibitor, to glucose and pseudotrisaccharide (PTS) but also transferred PTS to 17 sugar acceptors, including glucose, fructose, maltose, cellobiose, etc. Structural anal. of acarbose transfer products by using methylation, thin-layer chromatog., high-performance ion chromatog., and NMR indicated that PTS was transferred primarily to the C-6 of the acceptors and at lower degrees to the C-3 and/or C-4. The transglycosylation of sugar to methyl-α-D-glucopyranoside by forming an α-(1,3)-glycosidic linkage was demonstrated for the first time by using acarbose and ThMA. Kinetic anal. of the acarbose transfer products showed that the C-4 transfer product formed most rapidly but readily hydrolyzed, while the C-6 transfer product was stable and accumulated in the reaction mixture as the main product.

REFERENCE COUNT: 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L33 ANSWER 17 OF 58 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1999:174059 CAPLUS

DOCUMENT NUMBER: 131:4663

TITLE: Effects of acarbose combined with gymnemic acid on maltose digestion and absorption

AUTHOR(S): Luo, Hong; Imoto, Toshiaki; Hiji, Yasutake

CORPORATE SOURCE: Department of Physiology, Faculty of Medicine, Tottori University, Japan

SOURCE: Shoka to Kyushu (1998), 21(2), 126-129
CODEN: SHKYEZ; ISSN: 0389-3626

PUBLISHER: Nippon Shoka Kyushu Gakkai

DOCUMENT TYPE: Journal

LANGUAGE: Japanese

AB Diet regimen and the control of nutrient entry are broadly accepted as basic treatment of diabetes. Maltose is an important hydrolyzate of starch a main source of nutrition. Acarbose is an alpha-D-glucosidase inhibitor with potent effect on sucrase but with a weak effect on maltase. Gymnemic acid (GA), a group of triterpene glucuronides, inhibits glucose absorption. It was hypothesized that nutrient control can be improved by the combination both of them. The combinative effects were investigated both on maltose absorption in situ and motility in vitro using the rat small intestine. Results: Acarbose and GA inhibited the absorption of maltose with IC50 0.27 mM and 0.85 mg/mL resp. With combination, the duration of acarbose was prolonged to more than 4 h and the onset of GA action

was shortened. As GA suppressed the auto-rhythmic contraction of small intestine, part of the combinative effect owes to functional modulation of the unstirred layer. There were observed synergic effects of acarbose and GA. Improvements of postprandial hyperglycemia, hyperinsulinemia and insulin resistance and overweight in diabetic care as well as diminution of the adverse effects in acarbose application were perspective with the combination.

L2 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:1074181 CAPLUS
DOCUMENT NUMBER: 142:23470
TITLE: Preparation method of valienamine via selective hydrolysis of acarbose, validamycin , and validoxylamine derivatives using exchange resins or zeolite as catalysts
INVENTOR(S): Hur, Yul; Oh, Jin-Hwan; Park, Young-Il
PATENT ASSIGNEE(S): B T Gin., Inc., S. Korea
SOURCE: PCT Int. Appl., 16 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004108657	A1	20041216	WO 2003-KR2657	20031205
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
KR 2004106192	A	20041217	KR 2003-38671	20030616
AU 2003304178	A1	20050104	AU 2003-304178	20031205
CN 1849297	A	20061018	CN 2003-80110343	20031205
JP 2006527165	T	20061130	JP 2005-500590	20031205

PRIORITY APPLN. INFO.:

KR 2003-37561	A	20030611
KR 2003-38671	A	20030616
WO 2003-KR2657	W	20031205

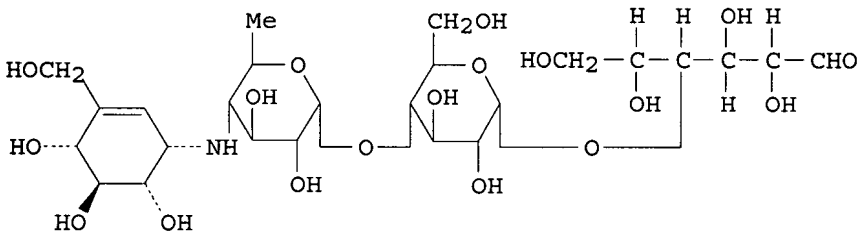
OTHER SOURCE(S): CASREACT 142:23470

AB Disclosed is a preparation method of valienamine using solid catalysts. The valienamine, which has strong inhibiting activity, is prepared by selective hydrolysis of acarbose and acarbose derivs., validamycin and validamycin derivs., validamycin and validamycin derivs., or validoxylamine and validoxylamine derivs. In the present invention, a solid catalyst such as a strong acidic cation exchange resin, a strong basic anion exchange resin or zeolite is used.

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:536447 CAPLUS
DOCUMENT NUMBER: 143:284769
TITLE: Microbial transformation of validamycin A to valienamine by immobilized cells
AUTHOR(S): Zheng, Yu-Guo; Zhang, Xian-Feng; Shen, Yin-Chu
CORPORATE SOURCE: Institute of Bioengineering, Zhejiang University of Technology, Hangzhou, 310014, Peop. Rep. China
SOURCE: Biocatalysis and Biotransformation (2005), 23(2), 71-77
CODEN: BOBOEQ; ISSN: 1024-2422
PUBLISHER: Taylor & Francis Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 143:284769
AB Immobilized Pseudomonas sp. HZ519 cells have been used for transformation of validamycin A to valienamine and the degradation pathway of validamycin A by Pseudomonas sp. HZ519 cells have been used for transformation of validamycin A to valienamine and the degradation pathway of validamycin A by Pseudomonas sp. HZ519 has also been studied. Substrate inhibition in immobilized cell system was avoided. An average of 8.6 g L-1 valienamine concentration was obtained when concentration of validamycin A was increased up to 120 g
L-1. Through a treatment of the immobilized cells with 0.3 mol L-1 substrate, the activity of the immobilized cells was increased distinctly. Compared with free cells, the productivity of valienamine by CA-immobilized cells was improved about three times. The reusability of the immobilized cells was evaluated with repeated-batch degradation expts. The Tiele modulus was obtained from the exptl. effectiveness factor. The result showed that the degradation process in the immobilized system was governed by intraparticle diffusion and chemical reaction.
REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

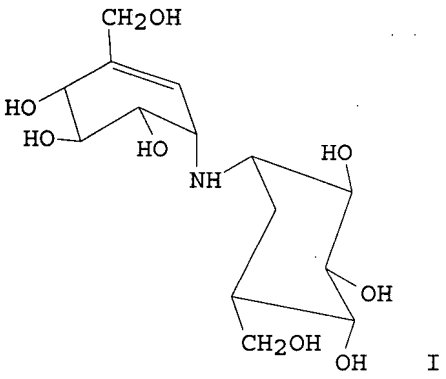
L6 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1981:187620 CAPLUS
DOCUMENT NUMBER: 94:187620
TITLE: Derivatives of acarbose and their inhibitory effects on α-glucosidases
AUTHOR(S): Junge, B.; Boeshagen, H.; Stoltefuss, J.; Mueller, L.
CORPORATE SOURCE: Inst. Biochem., Bayer A.-G., Wuppertal, D 5600, Fed. Rep. Ger.
SOURCE: Enzyme Inhibitors, Proc. Meet. (1980), 123-37.
Editor(s): Brodbeck, Urs. Verlag Chem.: Weinheim, Fed. Rep. Ger.
CODEN: 45FGAU
DOCUMENT TYPE: Conference
LANGUAGE: English
GI



I

AB A trisaccharide obtained by removal of the cyclitol unit of acarbose (I) by cleavage at the allylic C-N bond had no inhibitory effect on pancreatic α-amylase or sucrase from porcine intestinal mucosa. Two diastereomeric products formed by simple saturation of the double bond in I were obtained. One of them, probably with the L-ido configuration in the cyclitol ring, had no effect on either enzyme, whereas the other, with the D-gluco configuration in the cyclitol ring, was inactive towards α-amylase but inhibited sucrase. A further hydrogenation product, in which the double bond was reduced and the primary OH group in the cyclitol ring removed, was inactive with both enzymes. Loss of 1 glucose residue under mild hydrolysis conditions did not result in marked loss of inhibitory activity. However, under more drastic hydrolysis conditions, the 2nd glucose unit is also cleaved and the remaining cyclitol and amino sugar units form a tricyclic compound which is inactive. Validamycin A, validoxylamine A, and valienamine were also inactive against α-amylase and sucrase. Thus, the unsatd. cyclitol and the amino sugar are essential for inhibitory activity. A series of semisynthetic O-, S-, and N-glycosides of I were prepared and tested for α-glucosidase inhibitory products. The best inhibitors, N-glycosides from anilines and 1,2-benzisothiazolinones, had a 3-fold higher inhibitory activity against sucrase than I.

L9 ANSWER 7 OF 14 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1988:611342 CAPLUS
DOCUMENT NUMBER: 109:211342
TITLE: Total synthesis of (+)-validoxylamine A
AUTHOR(S): Ogawa, Seiichiro; Miyamoto, Yasunobu
CORPORATE SOURCE: Fac. Sci. Technol., Keio Univ., Hiyoshi, 223, Japan
SOURCE: Chemistry Letters (1988), (5), 889-90
CODEN: CMLTAG; ISSN: 0366-7022
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 109:211342
GI



I

AB (+)-Validoxylamine A (I) was synthesized by selective deoxygenation of (+)-validoxylamine B derivative, which was obtained by the coupling of the partially protected (+)-valienamine and (1R,2S,5R,7R,8R,9R,10R)-8,9-dibenzyloxy-5-phenyl-4,6,11-trioxatricyclo[8.1.0.02,7]undecane. The present synthesis constitutes a formal total synthesis of antibiotic validamycin A.

L9 ANSWER 8 OF 14 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1986:163594 CAPLUS
DOCUMENT NUMBER: 104:163594
TITLE: Development of validamycin, its controlling effect on rice sheath blight
AUTHOR(S): Yamamoto, Hiroichi
CORPORATE SOURCE: Agric. Chem. Div., Takeda Chem. Ind., Ltd., Japan
SOURCE: Japan Pesticide Information (1985), 47, 17-22
CODEN: JPIFAN; ISSN: 0368-265X
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Validamycin A (I) [37248-47-8] isolated from Streptomyces hygroscopicus limoneus (strain T-7545) controlled rice sheath blight caused by Rhizoctonia solani at 45 g/ha for high-volume spray and 90-120 g/ha for dusting. I.v. LD50 values of I were 7.2-7.5 and >10 g/kg in rats and mice resp., whereas oral LD50 was >20 g/kg because of detoxication by intestinal microflora. I injected i.v. into rats and guinea pigs was rapidly excreted in urine without metabolization. β-Glucosidase [9001-22-3] of the intestinal bacteria of rats and guinea pigs treated orally with I, and of the rice epiphytic and soil microbes split I to validoxylamine A (II) [38665-10-0] and D-glucose [50-99-7]. Subsequently the soil microbes converted II to valienamine (III) [38231-86-6] and validamine (IV) [32780-32-8].

L9 ANSWER 9 OF 14 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1985:200861 CAPLUS

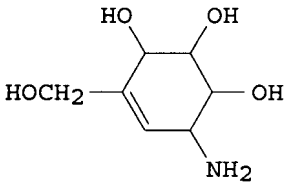
DOCUMENT NUMBER: 102:200861
TITLE: Microbial degradation of validamycin A by Flavobacterium saccharophilum. Enzymic cleavage of C-N linkage in validoxylamine A
AUTHOR(S): Asano, Naoki; Takeuchi, Masayoshi; Ninomiya, Kotaro; Kameda, Yukihiko; Matsui, Katsuhiko
CORPORATE SOURCE: Sch. Pharm., Hokuriku Univ., Kanazawa, 920-11, Japan
SOURCE: Journal of Antibiotics (1984), 37(8), 859-67
CODEN: JANTAJ; ISSN: 0021-8820
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 102:200861

AB The enzymic cleavage of the C-N linkage in the degradation of validamycin A by F. saccharophilum was examined using N-p-nitrophenyl derivs. of validamine and valienamine as synthetic model substrates for validoxylamine A. Incubation of N-p-nitrophenylvalidamine with the membrane fraction from the organism led to formation of N-p-nitrophenyl-3-ketovalidamine, and succeeding cleavage of C-N linkage. As the products of the cleavage step, one was identified as p-nitroaniline and another keto compound could not be purified enough because of its instability. However, on the basis of its hydrogenation products, the structure of the keto compound could be established as 5D-(5/6)-5-C-(hydroxymethyl)-2,6-dihydroxy-2-cyclohexen-1-one. The same experiment was carried out with N-p-nitrophenylvalienamine. In this case, N-p-nitrophenyl-3-ketovalienamine could be isolated as an intermediate but the desired keto compound from the cleavage step could not be isolated because of its instability. The participation of 2 enzymes, i.e., a dehydrogenase and a C-N lyase on the cleavage of C-N linkage was assured, and moreover, the anal. of its products, together with those of the previous studies lead to the proposal of a degradation pathway for validamycin A by F. saccharophilum.

L9 ANSWER 10 OF 14 CAPLUS
ACCESSION NUMBER: 1984:33258 CAPLUS
DOCUMENT NUMBER: 100:33258
TITLE: Production of valienamine and validamine
PATENT ASSIGNEE(S): Takeda Chemical Industries, Ltd., Japan; Institute for Fermentation Research
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 58152496	A	19830910	JP 1982-34923	19820304
JP 02026957	B	19900613		

PRIORITY APPLN. INFO.: JP 1982-34923 19820304
OTHER SOURCE(S): CASREACT 100:33258
GI



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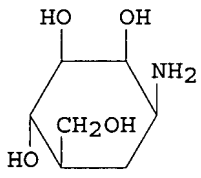


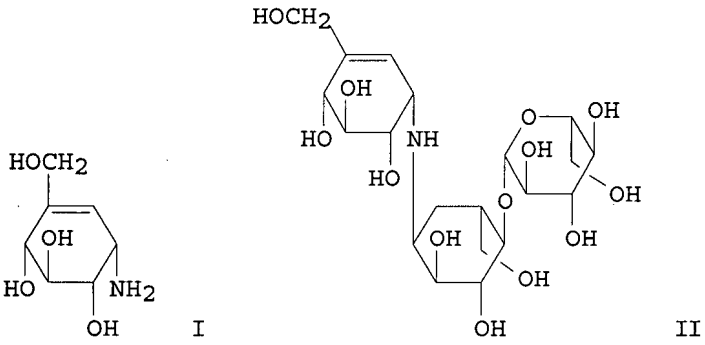
II

AB Valienamine (I) [38231-86-6] and(or) validamine (II) [32780-32-8] are produced by treating validamycin A [37248-47-8] and(or) validoxylamine [38665-10-0] with Cytophaga heparina. Thus, the microorganism was aerobically cultured at 28° for 96 h on a medium containing (NH4)2SO4 1, KH2PO4 0.7, K2HPO4 0.3, MgSO4 0.01 kg, 20% validamycin A 10, and water 100 L. The culture yielded 12.7 g valienamine.

L9 ANSWER 11 OF 14 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1982:525711 CAPLUS
DOCUMENT NUMBER: 97:125711
TITLE: Valienamine
PATENT ASSIGNEE(S): Takeda Chemical Industries, Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 57054593	A	19820401	JP 1980-128157	19800916
JP 02002589	B	19900118		

PRIORITY APPLN. INFO.: JP 1980-128157 19800916
GI



AB Valienamine (I) [38231-86-6] is produced from validamycin or validoxylamine with Flavobacterium. Thus, F. saccharophilum 121 (IFO 13984) was cultured with shaking at 27° for 4 days on 2 L pH 7.1 medium containing validamycin A (II) [37248-47-8] 1, (NH4)2SO4 1, K2HPO4 0.7, KH2PO4 0.3, and MgSO4 0.01%. The culture supernate was subjected to column chromatog. on Amberlite IRC-50 (NH4+) and Dowex 1x2 (OH-). The I-containing fraction was concentrated under vacuum and 3.5 g I was crystallized from 80% EtOH.

L9 ANSWER 12 OF 14 MEDLINE on STN
ACCESSION NUMBER: 2001404205 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11456959
TITLE: Biosynthesis of the validamycins: identification of intermediates in the biosynthesis of validamycin A by Streptomyces hygroscopicus var. limoneus.
AUTHOR: Dong H; Mahmud T; Tornus I; Lee S; Floss H G
CORPORATE SOURCE: Department of Chemistry, Box 351700, University of Washington, Seattle, WA 98195-1700, USA.
CONTRACT NUMBER: AI 20264 (NIAID)

SOURCE: Journal of the American Chemical Society, (2001 Mar 28) Vol. 123, No. 12, pp. 2733-42.
Journal code: 7503056. ISSN: 0002-7863.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
(RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200110
ENTRY DATE: Entered STN: 29 Oct 2001
Last Updated on STN: 29 Oct 2001
Entered Medline: 25 Oct 2001

AB To study the biosynthesis of the pseudotrisaccharide antibiotic, validamycin A (1), a number of potential precursors of the antibiotic were synthesized in (2)H-, (3)H-, or (13)C-labeled form and fed to cultures of Streptomyces hygroscopicus var. limoneus. The resulting validamycin A from each of these feeding experiments was isolated, purified and analyzed by liquid scintillation counting, (2)H- or (13)C NMR or selective ion monitoring mass spectrometry (SIM-MS) techniques. The results demonstrate that 2-epi-5-epi-valiolone (9) is specifically incorporated into 1 and labels both cyclitol moieties. This suggests that 9 is the initial cyclization product generated from an open-chain C(7) precursor, D-sedoheptulose 7-phosphate (5), by a DHQ synthase-like cyclization mechanism. A more proximate precursor of 1 is valienone (11), which is also incorporated into both cyclitol moieties. The conversion of 9 into 11 involves first epimerization to 5-epi-valiolone (10), which is efficiently incorporated into 1, followed by dehydration, although a low level of incorporation of 2-epi-valienone (15) is also observed. Reduction of 11 affords validone (12), which is also incorporated specifically into 1, but labels only the reduced cyclitol moiety. The mode of introduction of the nitrogen atom linking the two pseudosaccharide moieties is not clear yet. 7-Tritiated valiolamine (8), valienamine (2), and validamine (3) were all not incorporated into 1, although each of these amines has been isolated from the fermentation, with 3 being most prevalent. Demonstration of in vivo formation of [7-(3)H]validamine ([7-(3)H]-3) from [7-(3)H]-12 suggests that 3 may be a pathway intermediate and that the nonincorporation of [7-(3)H]-3 into 1 is due to a lack of cellular uptake. We thus propose that 3, formed by amination of 12, and 11 condense to form a Schiff base, which is reduced to the pseudodisaccharide unit, validoxylamine A (13). Transfer of a D-glucose unit to the 4'-position of 13 then completes the biosynthesis of 1. Other possibilities for the mechanism of formation of the nitrogen bridge between the two pseudosaccharide units are also discussed.

L9 ANSWER 13 OF 14 MEDLINE on STN
ACCESSION NUMBER: 92138366 MEDLINE
DOCUMENT NUMBER: PubMed ID: 1778791
TITLE: All eight possible mono-beta-D-glucosides of validoxylamine A. I. Preparation and structure determination.
AUTHOR: Asano N; Kameda Y; Matsui K
CORPORATE SOURCE: School of Pharmacy, Hokuriku University, Kanazawa, Japan.
SOURCE: The Journal of antibiotics, (1991 Dec) Vol. 44, No. 12, pp. 1406-16.
Journal code: 0151115. ISSN: 0021-8820.
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199203
ENTRY DATE: Entered STN: 29 Mar 1992
Last Updated on STN: 29 Mar 1992
Entered Medline: 11 Mar 1992

AB Validamycin A is the major and most active compound among the validamycin complex. Since the site of beta-glucosidic attachment to validoxylamine A (1) was expected to affect the activity against the pathogenic fungus, Rhizoctonia solani, all eight possible mono-beta-D-glucosides of 1 were prepared. 2-O-, 4-O-, 4'-O-, and 7'-O-beta-D-glucopyranosylvalidoxylamine A (2, 4, 6 and 9, respectively) were prepared by microbial beta-glycosylation of 1 with strains of Rhodotorula sp. 7-O- and 6'-O-beta-D-glucopyranosylvalidoxylamine A (5a and 8a, respectively) were prepared semisynthetically through microbial formation of 7-O-beta-D-glucopyranosylvalidamine (10), oxidation of the primary amine of 10 to a ketone, and coupling of the ketone derivative with valienamine, and through microbial formation of 6-O-beta-D-glucopyranosylvalienamine (11), and coupling of 11 with (2R)-(2,4/3,5)-2,3,4-trihydroxy-5-hydroxymethylcyclohexanone (12), respectively. 3-O- and 5'-O-beta-D-glucopyranosylvalidoxylamine A (3a and 7a, respectively) were chemically synthesized.

L9 ANSWER 14 OF 14 MEDLINE on STN
ACCESSION NUMBER: 85006587 MEDLINE
DOCUMENT NUMBER: PubMed ID: 6548220
TITLE: Microbial degradation of validamycin A by Flavobacterium saccharophilum. Enzymatic cleavage of C-N linkage in validoxylamine A.
AUTHOR: Asano N; Takeuchi M; Ninomiya K; Kameda Y; Matsui K
SOURCE: The Journal of antibiotics, (1984 Aug) Vol. 37, No. 8, pp. 859-67.
Journal code: 0151115. ISSN: 0021-8820.
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198411
ENTRY DATE: Entered STN: 20 Mar 1990
Last Updated on STN: 20 Mar 1990
Entered Medline: 2 Nov 1984

AB The enzymatic cleavage of C-N linkage in the degradation of validamycin A by Flavobacterium saccharophilum was examined using N-p-nitrophenyl derivatives of validamine and valienamine as synthetic model substrates for validoxylamine A. Incubation of N-p-nitrophenylvalidamine with the membrane fraction from the organism led to formation of N-p-nitrophenyl-3-ketovalidamine, and succeeding cleavage of C-N linkage. As the products of the cleavage step, one was identified as p-nitroaniline and another keto compound could not be purified enough because of its instability. However, on the basis of its hydrogenation products, the structure of the keto compound could be established as 5D-(5/6)-5-C-(hydroxy-methyl)-2,6-dihydroxy-2-cyclohexen-1-one. The same experiment was carried out with N-p-nitrophenylvalienamine. In this case, N-p-nitrophenyl-3-ketovalienamine could be isolated as an intermediate but the desired keto compound from the cleavage step could not be isolated because of its instability. The participation of two enzymes, that is, a dehydrogenase and a C-N lyase on the cleavage of C-N linkage was assured, and moreover, the analysis of its products, together with those of the previous studies allow us to propose a degradation pathway of validamycin A by Flavobacterium saccharophilum.

L9 ANSWER 1 OF 14 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2006:605051 CAPLUS
DOCUMENT NUMBER: 145:466845
TITLE: Development of validamycin and its decomposing products
AUTHOR(S): Shentu, Xuping; Zheng, Yuguo; Yu, Xiaoping
CORPORATE SOURCE: Institute of Life Sciences, China Institute of Metrology, Hangzhou, 310018, Peop. Rep. China
SOURCE: Guowai Yiyao Kangshengsu Fence (2005), 26(6), 275-278
CODEN: GYKFAT; ISSN: 1001-8751
PUBLISHER: Zhongguo Kangshengsu Zazhishe
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Chinese
AB A review. Validamycin can be enzymolyzed into validoxylamine A, valienamine, and validamine. Validoxylamine A is an inhibitor of insect trehalase, and can be developed into biopesticide. Valienamine and validamine are glycosidase inhibitors, and are important medicinal intermediates for synthesizing other enzyme inhibitor type hypoglycemic agents. This paper reviewed the structures, characteristics, and preparation methods of validoxylamine A, valienamine, and validamine.

L9 ANSWER 2 OF 14 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:1089824 CAPLUS
DOCUMENT NUMBER: 144:50172
TITLE: Preparation of valienamine and validamine using Stenotrophomonas maltophilia CCTCC No.M 204024
INVENTOR(S): Zheng, Yuguo; Chen, Xiaolong; Xue, Yaping; Wang, Yuanshan; Shen, Yinchu
PATENT ASSIGNEE(S): Zhejiang University of Technology, Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 19 pp.
CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1563397	A	20050112	CN 2004-10017516	20040405
WO 2005098014	A1	20051020	WO 2005-CN267	20050307

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: CN 2004-10017516 A 20040405
AB A process is provided for the production of valienamine and validamine using a new strain of Stenotrophomonas maltophilia (CCTCC No.M 204024). Valienamine and validaminecan be prepared from validamycin or validoxylamine using Stenotrophomonas maltophilia cells or an enzyme extract from Stenotrophomonas maltophilia. The preparation method comprises fermenting at 20-40 °C with initial pH of 6.0-8.0 for 1-180 h to decompose validamycin or validoxylamine to form valienamine and validamine followed by product purification by ion exchange chromatog. The culture medium contains validamycin (0.5-20.0 weight/volume %), (NH4)2SO4

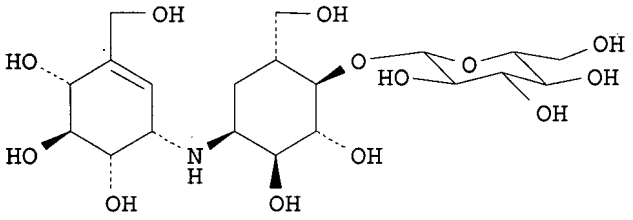
(0.5-10.0%), KCl (0.5-5.0%), $Na_2HPO_4 \cdot 12H_2O$ (0.1-10.0%), $NaH_2PO_4 \cdot 2H_2O$ (0.1-5.0%), $MgSO_4$ (0.01-1.0%), and water (balance).

L9 ANSWER 3 OF 14 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:950120 CAPLUS
DOCUMENT NUMBER: 141:365183
TITLE: Valienamine and validamine manufacture with Paenibacillus
INVENTOR(S): Tsujita, Kazuhiko; Matsuo, Norishige; Negishi, Ai; Negishi, Yoshinori
PATENT ASSIGNEE(S): Godo Shusei Co., Ltd., Japan
SOURCE: Jpn. Tokkyo Koho, 12 pp.
CODEN: JTXXFF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
JP 3586684	B1	20041110	JP 2004-102489		20040331
JP 2005151967	A	20050616			
JP 2005151971	A	20050616	JP 2004-200143		20040707
PRIORITY APPLN. INFO.:			JP 2003-367059	A	20031028
			JP 2004-102489	A3	20040331

AB The valienamine and validamine useful for manufacturing α-glucosidase inhibitor valiolamine are manufactured from validamycin or validoxylamine with Paenibacillus. Manufacture of validoxylamine from validamycin A with Paenibacillus and newly isolated Paenibacillus strains was shown. The physiol. and morphol. characteristics of the newly isolated soil Paenibacillus strains were also given.

L9 ANSWER 4 OF 14 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2001:124733 CAPLUS
DOCUMENT NUMBER: 134:292537
TITLE: Biosynthesis of the validamycins: Identification of intermediates in the biosynthesis of validamycin A by Streptomyces hygroscopicus var. limoneus
AUTHOR(S): Dong, Haijun; Mahmud, Taifo; Tornus, Ingo; Lee, Sungsook; Floss, Heinz G.
CORPORATE SOURCE: Department of Chemistry, University of Washington, Seattle, WA, 98195-1700, USA
SOURCE: Journal of the American Chemical Society (2001), 123(12), 2733-2742
CODEN: JACSAT; ISSN: 0002-7863
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



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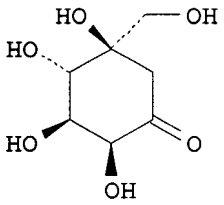

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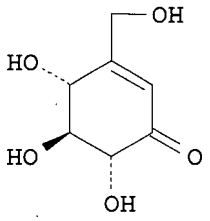

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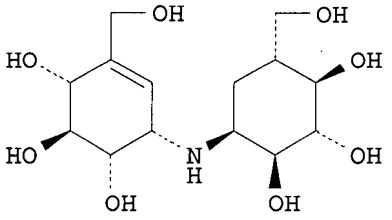


VI

AB To study the biosynthesis of the pseudotrisaccharide antibiotic, validamycin A (I), a number of potential precursors of the antibiotic were synthesized in 2H-, 3H-, or 13C-labeled form and fed to cultures of Streptomyces hygroscopicus var. limoneus. The resulting I from each of these feeding expts. was isolated, purified and analyzed by liquid scintillation counting, 2H- or 13C NMR or selective ion monitoring mass spectrometry (SIM-MS) techniques. The results demonstrate that 2-epi-5-epi-valiolone (II) is specifically incorporated into I and labels both cyclitol moieties. This suggests that II is the initial cyclization product generated from an open-chain C7 precursor, D-sedoheptulose 7-phosphate, by a DHQ synthase-like cyclization mechanism. A more proximate precursor of I is valienone (III), which is also incorporated into both cyclitol moieties. The conversion of II into III involves first epimerization to 5-epi-valiolone, which is efficiently incorporated into I, followed by dehydration, although a low level of incorporation of 2-epi-valienone is also observed Reduction of III affords validone (IV), which is also incorporated specifically into I, but labels only the reduced cyclitol moiety. The mode of introduction of the nitrogen atom linking the two pseudosaccharide moieties is not clear yet. 7-Tritiated valiolamine, valienamine, and validamine (V) were all not incorporated into I, although each of these amines has been isolated from the fermentation, with V being most prevalent. Demonstration of in vivo formation of [7-3H]-V from [7-3H]-IV suggests that V may be a pathway intermediate and that the nonincorporation of [7-3H]-V into I is due to a lack of cellular uptake. We thus propose that V, formed by amination of IV, and III condense to form a Schiff base, which is reduced to the pseudodisaccharide unit, validoxylamine A (VI). Transfer of a D-glucose unit to the 4'-position of VI then completes the biosynthesis of I. Other possibilities for the mechanism of formation of the nitrogen bridge between the two pseudosaccharide units are also discussed.

REFERENCE COUNT: 48 THERE ARE 48 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 5 OF 14 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1993:650258 CAPLUS

DOCUMENT NUMBER: 119:250258

TITLE: Valiolamine and its N-substituted derivatives.

α-D-glucosidase inhibitors. From validamycins to voglibose (AO-128), and antidiabetic agent

AUTHOR(S): Horii, Satoshi

CORPORATE SOURCE: Pharm. Res. Div., Takeda Chem. Ind. Ltd., Osaka, 532, Japan

SOURCE: Takeda Kenkyushoho (1993), 52, 1-26
CODEN: TAKHAA; ISSN: 0371-5167

DOCUMENT TYPE: Journal; General Review

LANGUAGE: English

AB A review with 41 refs. on pseudo-amino sugars and their α-D-glucosidase inhibitory activity, stereoselective conversion of valienamine and validamine into valiolamine, preparation of N-substituted valiolamines and their α-D-glucosidase inhibitory activity, synthesis of valiolamine and voglibose (AO-128) from D-glucose, and total synthesis of validoxylamine G and validamycin G.

L9 ANSWER 6 OF 14 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 1989:95679 CAPLUS

DOCUMENT NUMBER: 110:95679

TITLE: Synthetic studies on antibiotic validamycins. Part 12. Total synthesis of (+)-validamycin B and (+)-validoxylamine B

AUTHOR(S): Ogawa, Seiichiro; Miyamoto, Yasunobu; Nose, Taisuke

CORPORATE SOURCE: Fac. Sci. Technol., Keio Univ., Hiyoshi, 223, Japan

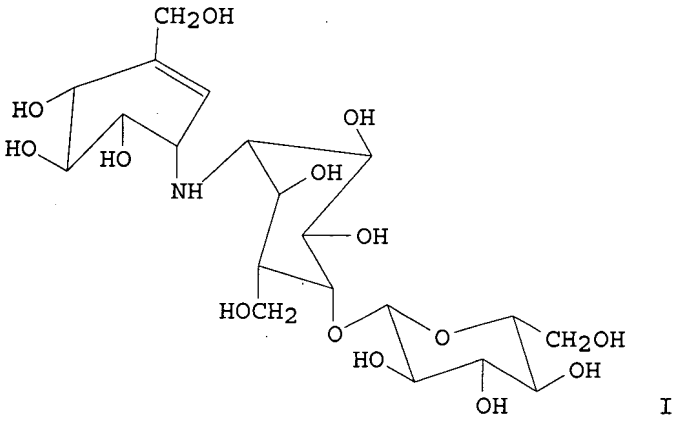
SOURCE: Journal of the Chemical Society, Perkin Transactions 1: Organic and Bio-Organic Chemistry (1972-1999) (1988), (9), 2675-80
CODEN: JCPRB4; ISSN: 0300-922X

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 110:95679

GI



I

AB The first total synthesis of validamycin B (I) and validoxylamine B comprises 2 approaches, i.e. the coupling of the β-D-glucopyranoside derivative of cyclohexene oxide and the protected (+)-valienamine, or the glycosylation of the protected derivative of validoxylamine B, obtained by coupling of protected cyclohexene oxide and protected (+)-valienamine.

L10 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2006:652542 CAPLUS
DOCUMENT NUMBER: 145:103375
TITLE: Preparation method of valienamine from validamycin using trifluoroacetic acid
INVENTOR(S): Huh, Yul; Oh, Jin Hwan
PATENT ASSIGNEE(S): Bt Gin, Inc., S. Korea
SOURCE: Repub. Korean Kongkae Taeho Kongbo, No pp. given
CODEN: KRXXA7
DOCUMENT TYPE: Patent
LANGUAGE: Korean
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
KR 2004000751	A	20040107	KR 2002-35682	20020625
PRIORITY APPLN. INFO.:			KR 2002-35682	20020625

AB A method for preparing valienamine from validamycin using trifluoroacetic acid (TFA) is provided to improve the production yield of valienamine by allowing only pseudodisaccharide to be produced as a byproduct and by enhancing the purifying efficiency. The valienamine is prepared from validamycin as a reaction substrate by using trifluoroacetic acid by selective hydrolysis. Preferably the validamycin is at least one selected from the group consisting of validamycin A, B, C, D, E, F and G. The final concentration of validamycin is 0.2-10%, and the concentration of trifluoroacetic acid is 10-60%. Preferably the reaction is performed at a temperature of 80-120°C for 1-24 h in an autoclave.

L11 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2006:652542 CAPLUS
DOCUMENT NUMBER: 145:103375
TITLE: Preparation method of valienamine from validamycin using trifluoroacetic acid
INVENTOR(S): Huh, Yul; Oh, Jin Hwan
PATENT ASSIGNEE(S): Bt Gin, Inc., S. Korea
SOURCE: Repub. Korean Kongkae Taeho Kongbo, No pp. given
CODEN: KRXXA7
DOCUMENT TYPE: Patent
LANGUAGE: Korean
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
KR 2004000751	A	20040107	KR 2002-35682	20020625
PRIORITY APPLN. INFO.:			KR 2002-35682	20020625

AB A method for preparing valienamine from validamycin using trifluoroacetic acid (TFA) is provided to improve the production yield of valienamine by allowing only pseudodisaccharide to be produced as a byproduct and by enhancing the purifying efficiency. The valienamine is prepared from validamycin as a reaction substrate by using trifluoroacetic acid by selective hydrolysis. Preferably the validamycin is at least one selected from the group consisting of validamycin A, B, C, D, E, F and G. The final concentration of validamycin is 0.2-10%, and the concentration of trifluoroacetic acid is 10-60%. Preferably the reaction is performed at a temperature of 80-120°C for 1-24 h in an autoclave.

L11 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:2831 CAPLUS
DOCUMENT NUMBER: 140:59898
TITLE: Hydrolytic preparation of valienamine from acarbose and/or acarbose derivatives using aqueous trifluoroacetic acid
INVENTOR(S): Her, Youl; Oh, Jin-Hwan
PATENT ASSIGNEE(S): B T Gin., Inc., S. Korea
SOURCE: PCT Int. Appl., 14 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004000782	A1	20031231	WO 2002-KR2198	20021123
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
KR 2004002339	A	20040107	KR 2002-51511	20020829
AU 2002368036	A1	20040106	AU 2002-368036	20021123
EP 1539672	A1	20050615	EP 2002-790977	20021123
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				

CN 1630630	A	20050622	CN 2002-829209		20021123
JP 2005530839	T	20051013	JP 2004-515194		20021123
IN 2004KN01947	A	20051230	IN 2004-KN1947		20041217
US 2005272674	A1	20051208	US 2005-519519		20050801
PRIORITY APPLN. INFO.:			KR 2002-35683	A	20020625
			KR 2002-51511	A	20020829
			WO 2002-KR21983	W	20020101
			WO 2002-KR2198	W	20021123

AB A method for the preparation of valienamine from acarbose and/or acarbose derivs. (e.g., disaccharide or trisaccharide) is described using aqueous trifluoroacetic acid to effect an acidic hydrolysis of the acarbose or its derivative so as to give valienamine in high yield and selectivity.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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=> d his

     (FILE 'HOME' ENTERED AT 17:35:45 ON 25 JUL 2007)

     FILE 'CAPLUS, MEDLINE' ENTERED AT 17:36:12 ON 25 JUL 2007

     FILE 'REGISTRY' ENTERED AT 17:36:29 ON 25 JUL 2007
                E VALIENAMINE/CN
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     FILE 'CAPLUS, MEDLINE' ENTERED AT 17:41:00 ON 25 JUL 2007
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L4        2319938 S L@ NOT L3
L5            116 S L2 NOT L3
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L7              1 S L5 AND TRIFLUOROACET?
L8            115 S L5 NOT L7
L9              1 S L5 AND ?FLUOROACET?
L10             3 S L5 AND ?ACETIC ACID?
L11           113 S L8 NOT L10
L12            22 S L11 AND ACARBOSE
L13             6 S L12 AND HYDROLYS?
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L15             0 S L14 AND CARBOXYLIC ACID?
L16             0 S L14 AND ?CARBOXYLIC ACID?
L17             0 S L14 AND ?CARBOXYLAT?
L18             0 S L14 AND ?TRIFLUORO?
L19             0 S ACARBOSE (P) TFA
L20             2 S ACARBOSE (P) TRIFLUOROACETIC ACID?
L21             1 S ACARBOSE (P) ?ACETIC ACID? (P) HYDROLYS?
L22            63 S ACARBOSE (P) ACID? (P) HYDROLY?
L23             1 S L22 AND CARBOXY?
L24            62 S L22 NOT L23
L25             0 S L24 AND TRIFLUOROCARBOXY?
L26             0 S L24 AND ?CARBOXY?
L27             0 S L26 AND ORGANIC ACID?
L28             0 S L26 AND ACID HYDROLY?
L29             0 S L24 AND ORGANIC ACID?
L30             1 S L24 AND ACID HYDROLY?
L31            61 S L24 NOT L30
L32             3 S L31 AND PREPAR?
L33            58 S L31 NOT L32
L34            46 S L33 AND HYDROLYSIS
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     FILE 'CASREACT' ENTERED AT 19:20:02 ON 25 JUL 2007
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L3            0 S L1 SSS FULL
L4              STRUCTURE UPLOADED
L5            0 S L4 SSS SAM
L6            0 S L4 SSS FULL
L7              STRUCTURE UPLOADED
L8            0 S L7 SSS SAM
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